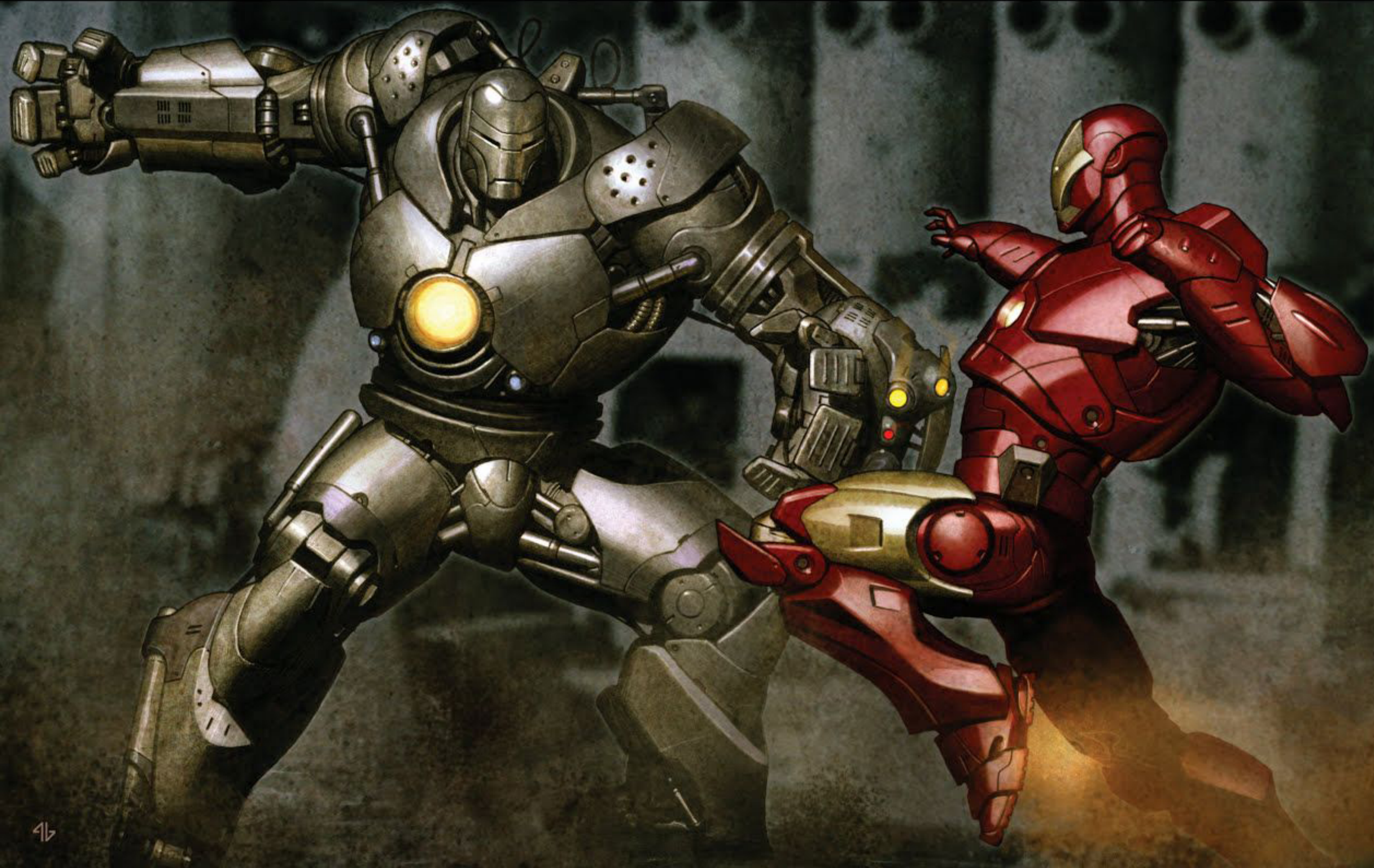


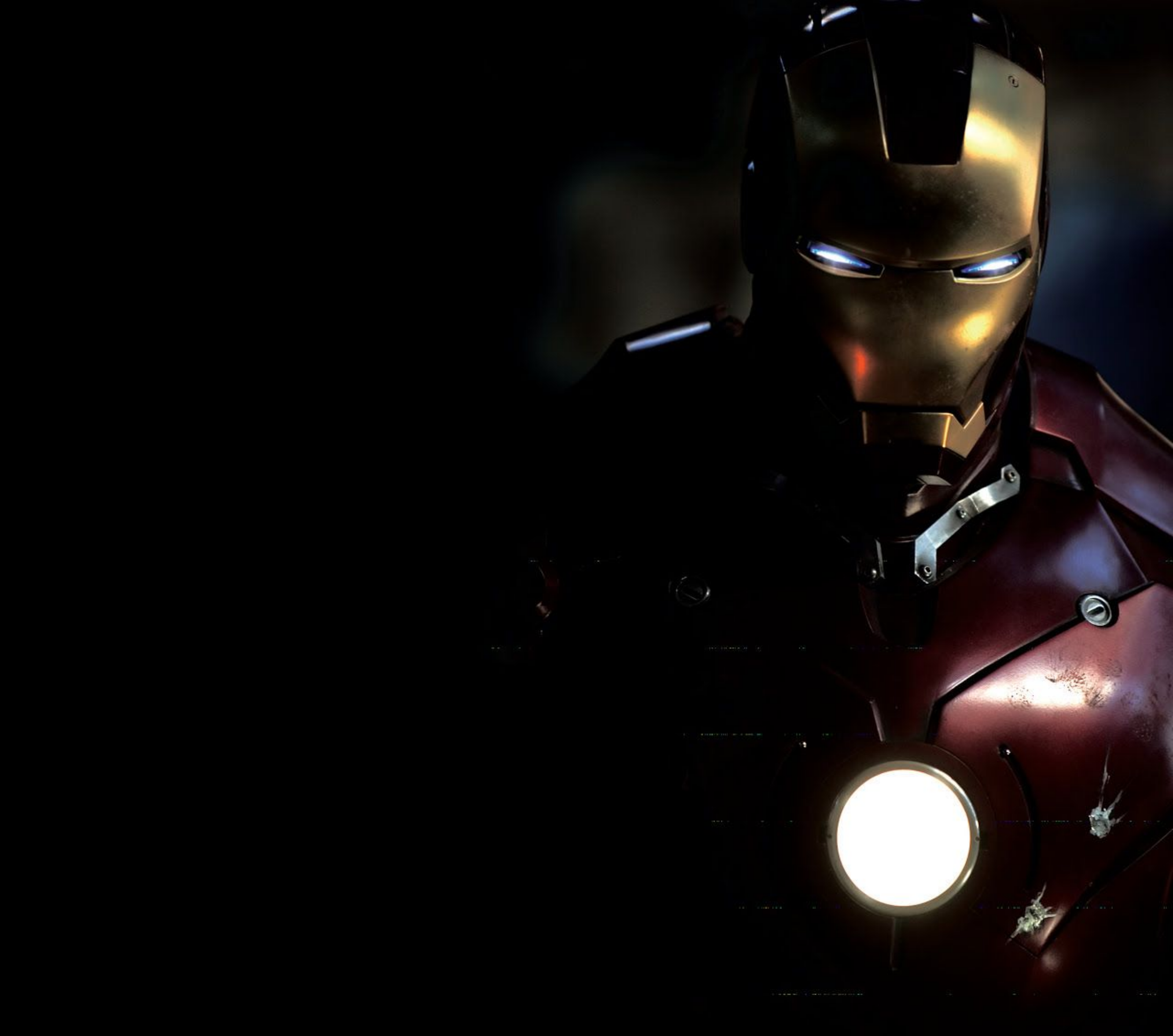
MARVEL

THE ART OF

IRON MAN



**AN EXCLUSIVE, INSIDER'S LOOK
INTO THE BLOCKBUSTER IRON MAN MOVIE!**

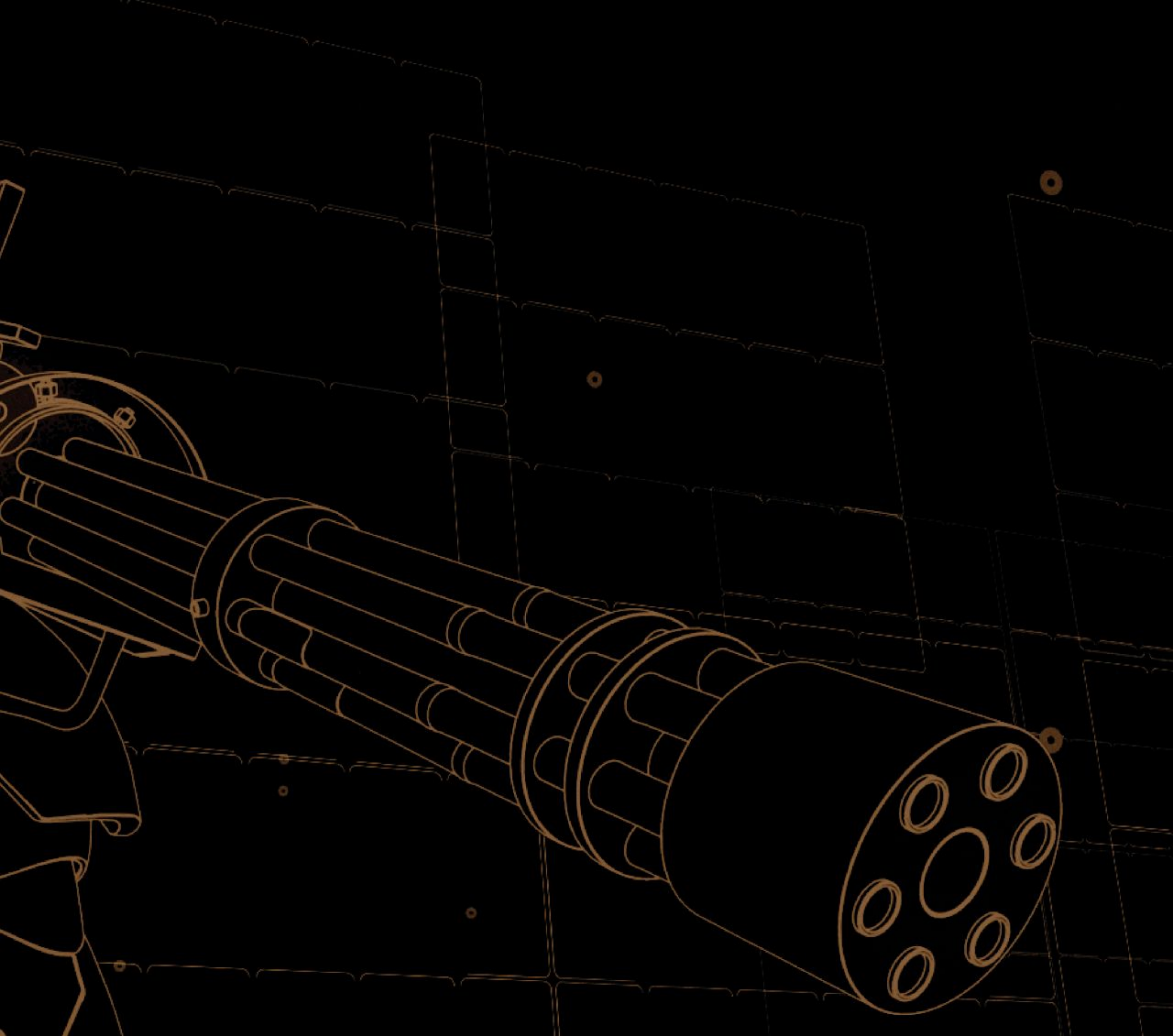


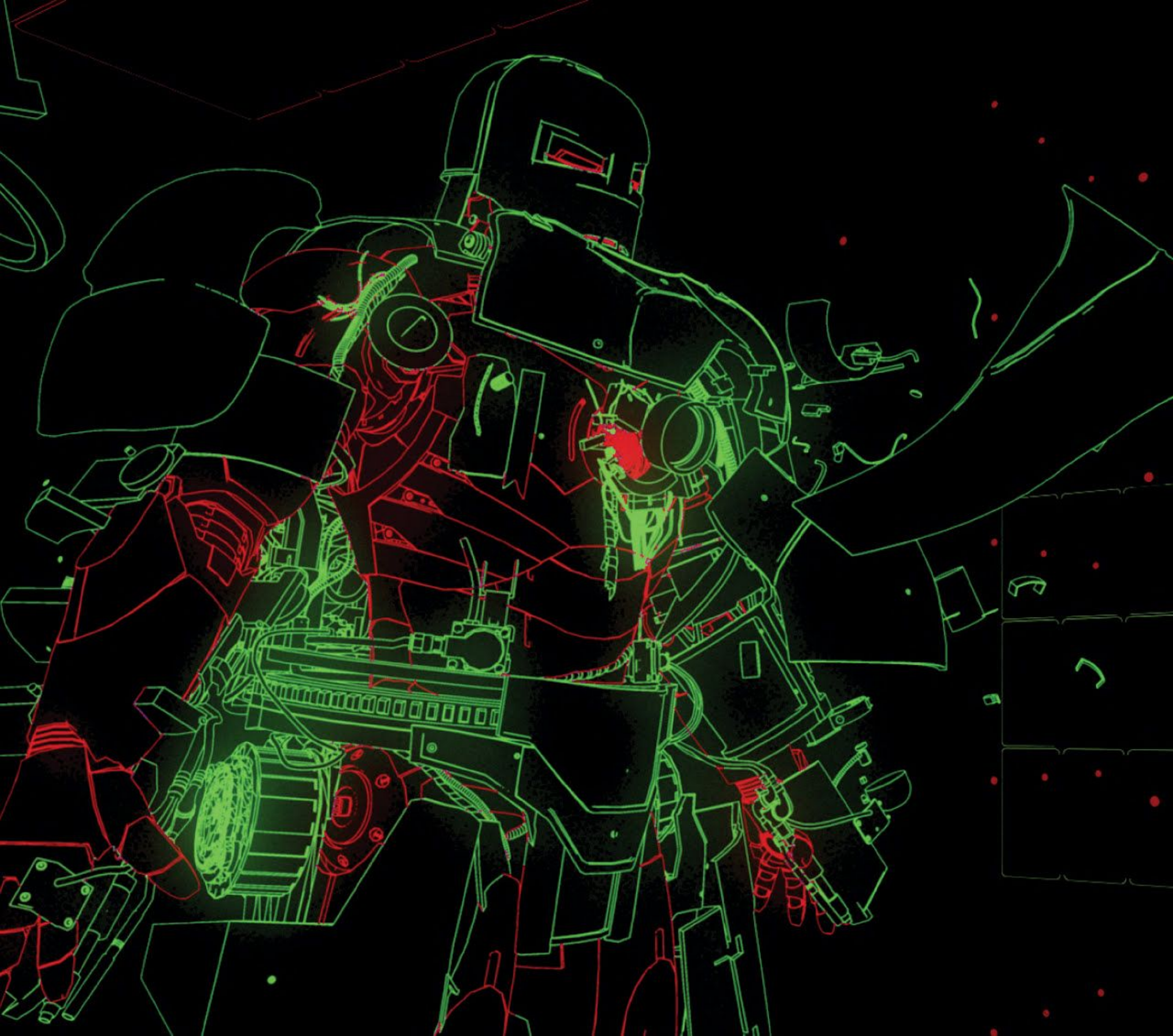


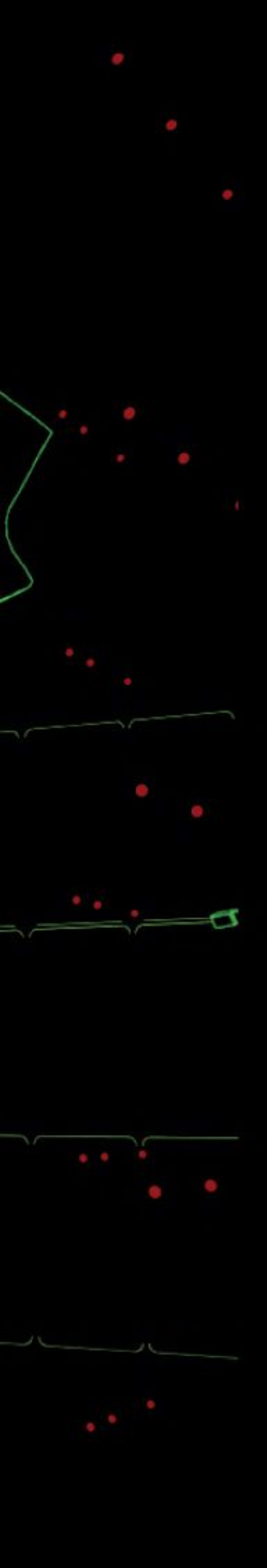
THE ART OF

IRON MAN









THE ART OF

IRON MAN

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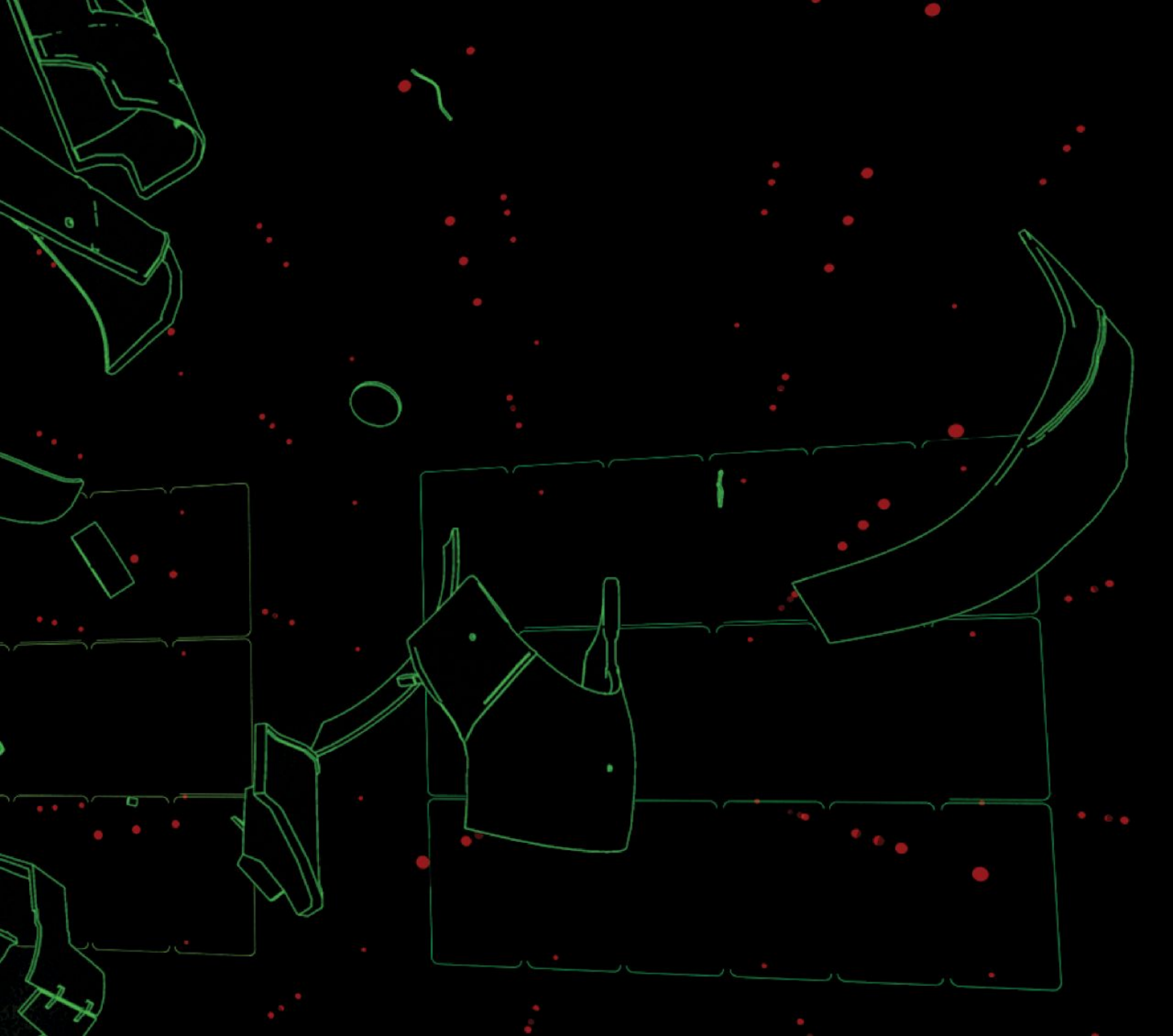
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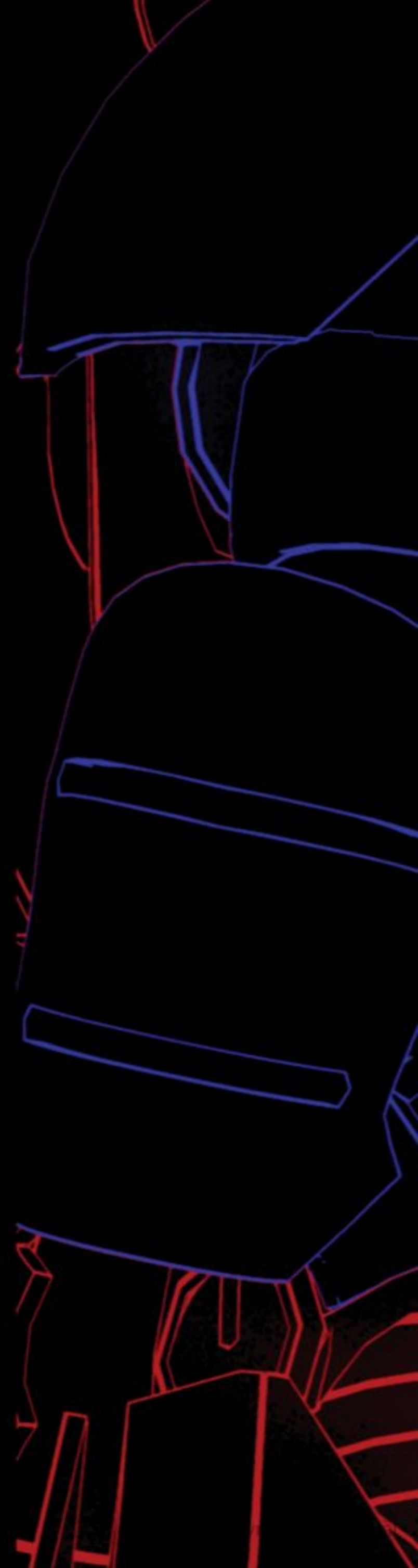
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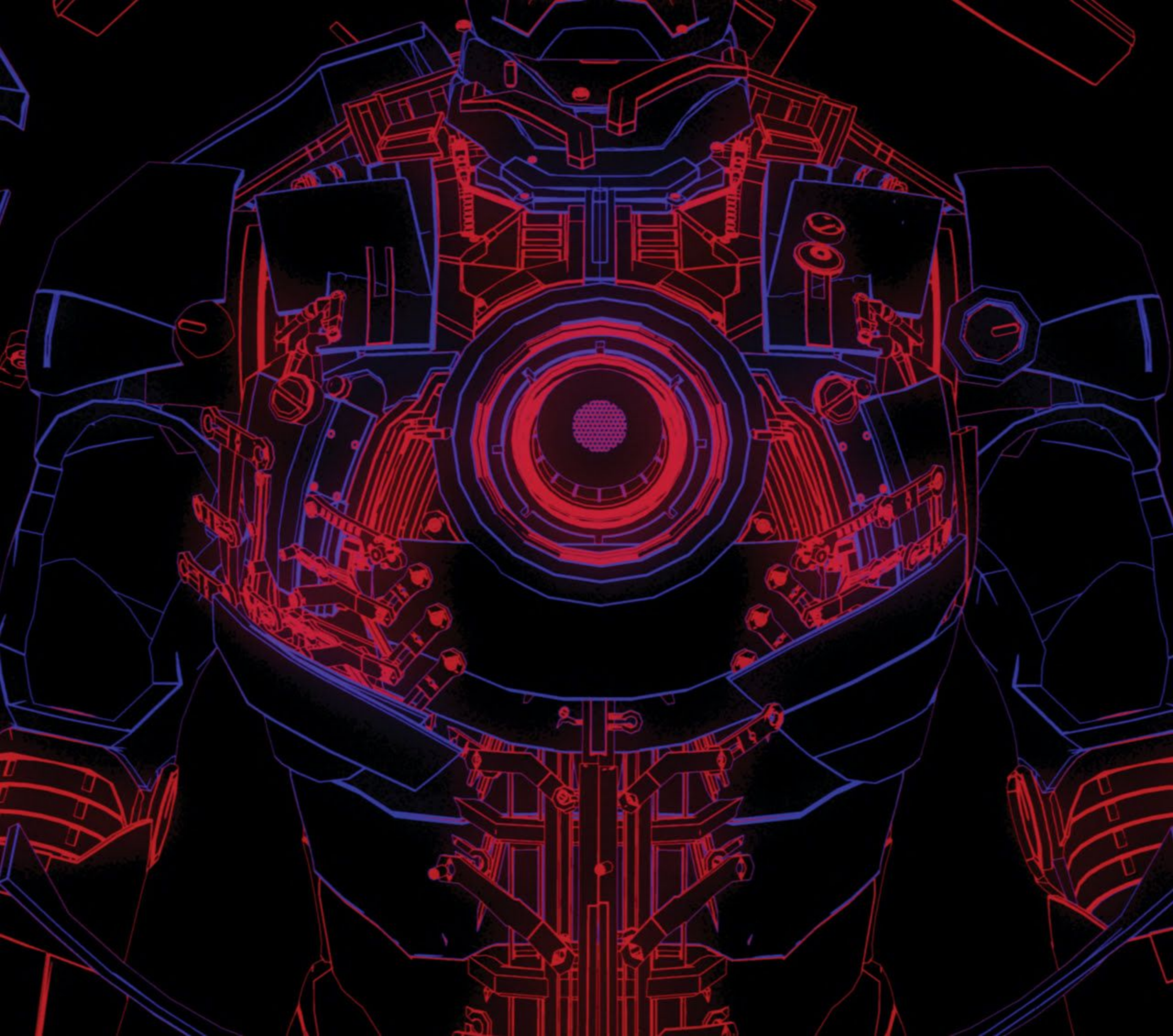
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FOREWORD

Iron Man was a life-changing experience. The best way to describe it would be that we were building the hot rod *while* we were racing it. It is the case, much of the time, that these movies never actually lock a script until they're shot and cut. They require an incredible amount of gut instinct and many talented collaborative partners. These types of movies are not made from a script as much as a mélange of storyboards, notes on cocktail napkins, dialogue scrawled on the back of the day's sides and keyframe drawings hung on the set for inspiration. The movie is slowly culled from both written and drawn elements that together inform the story.

The talented writers that we employed contributed a great deal early on in the process and, thanks to a strong and storied guild, were recognized in the front credits. There are, however, many others who contributed equally to the vision of the film, and it is to those unsung heroes that this book is dedicated. They are not, however, who this book is *for*. It is *for* the aspiring filmmakers. Both the ones chasing down their dreams and the ones who don't yet realize they will ever actually attempt to do this for a living. That was me. The kid reading *Starlog*. The fan who was curious about how the Spinners in *Blade Runner* flew or if the actual Enterprise miniature looked anything like the Revell one that I kluged together with Testors glue. I enjoyed the movies so much that looking behind the curtain didn't ruin them for me. Quite the contrary. It made me

love and appreciate them that much more.

There was a moment in post-production when everything seemed very tenuous and bleak. We hadn't settled into a satisfying cut, and the effects weren't yet landing right. It is an awful period in the process when, after years of hard work, you are struck with the lingering fear that, in spite of unflagging dedication and meticulous planning, the whole thing might go pear-shaped. It was around that point that Kevin Feige (producer and Marvel boss) gave me a copy of *The Making of Star Wars*. It documented interviews and photos done behind the scenes long before the film was ever a hit. When all seemed to be going very wrong. But it didn't. It went quite well, most would say, when all was said and done. Reading this book gave me the one thing most required for the making of a successful movie (and life, for that matter). Faith.

This phenomenon is so common it is indeed predictable. You plan and scheme. Some things work out, many don't. In the end, the movie either works or it doesn't, and you are never even aware of where that tipping point is when you pass it. Both success and failure hit you with equal surprise. It is best, therefore, to concentrate on making the movie. For those interested in making the movie, read on.

And thank you Stan Winston, wherever you are.

—JON FAVREAU

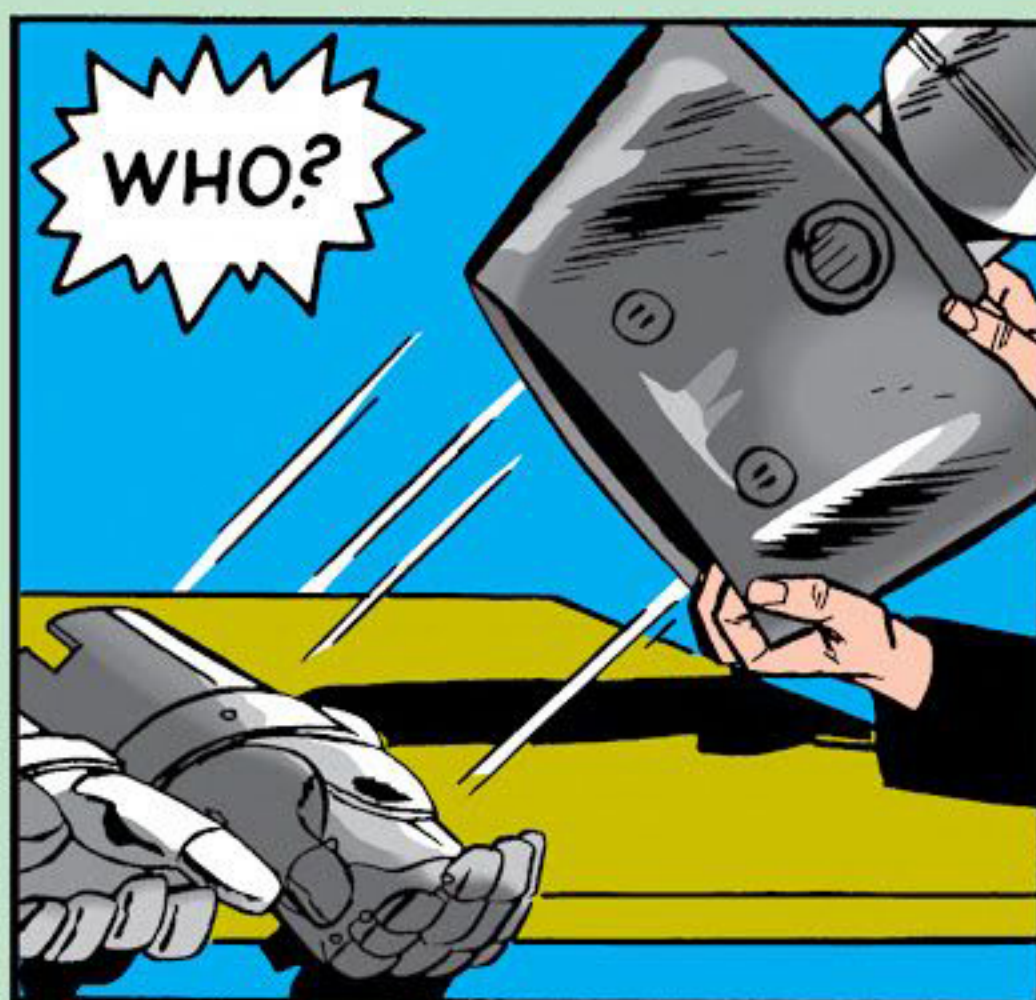
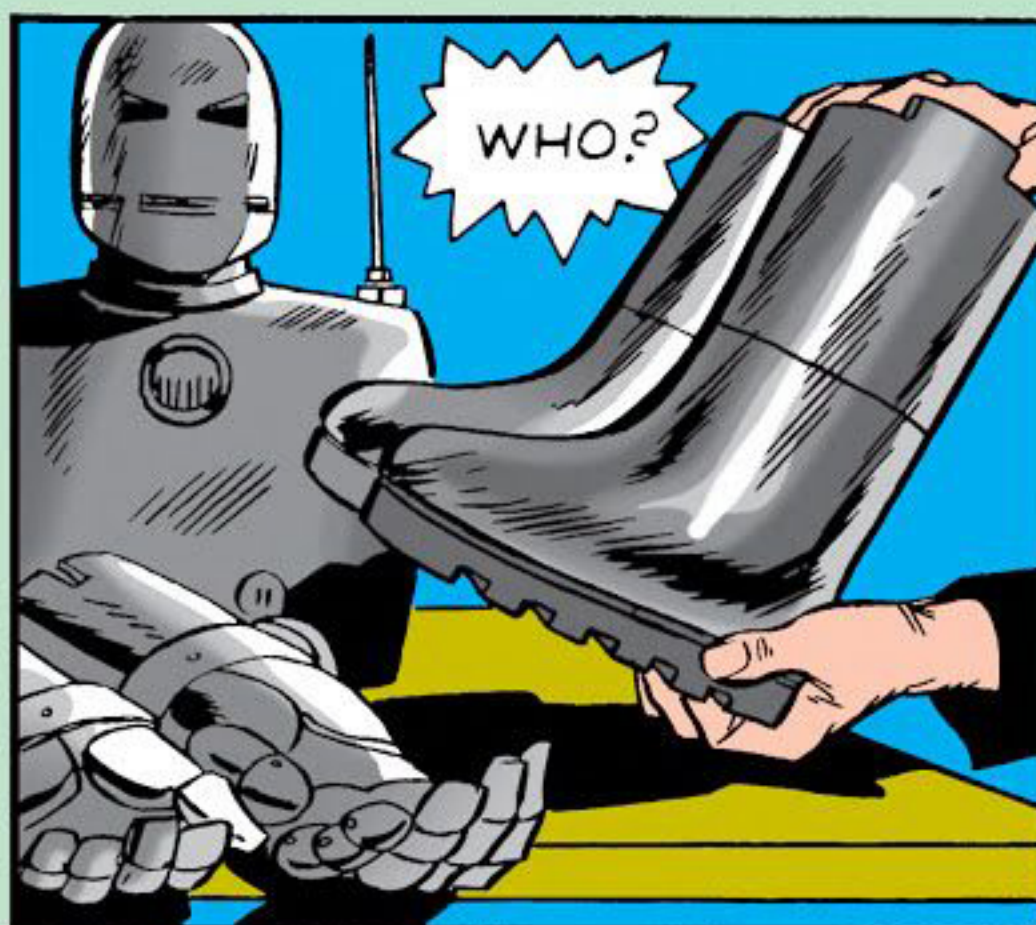
INTRODUCTION:

TALES OF SUSPENSE

Before his premiere movie became a box-office smash, Iron Man was not as instantly recognizable a commodity to the masses as the star-spangled Captain America, whose immense popularity was first sparked at the flashpoint of World War II. Nor was he as iconic as the Marvel Age phenomenon Spider-Man – who amazed patrons of pop culture the world over through comics, cartoons, movies and toys of every shape and size. Iron Man was never as ubiquitous as Wolverine and the X-Men or as attention-grabbing as the green-skinned giant, the Hulk. Tony Stark's armored alter ego is nonetheless one of comicdom's most popular and enduring characters. Conceived by Stan Lee and his stable mates of Silver Age innovation at the height of America's Cold War with the Soviet Union, Iron Man is still going strong in today's marketplace – stronger than ever, in fact. And after 45 years of continuous publication, one of the favorite sons of comics fandom has finally earned the adoration of the masses he so richly deserves.

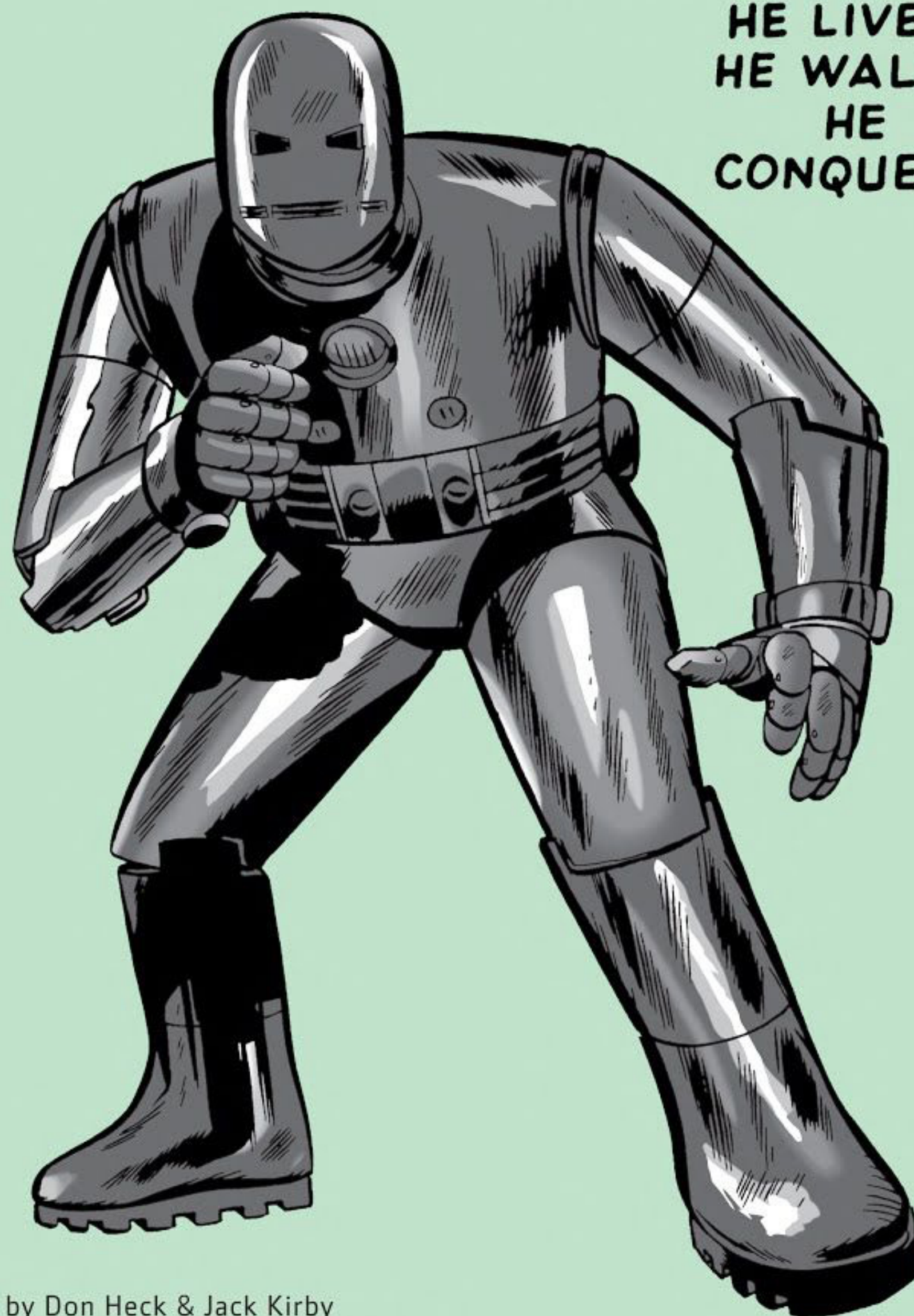
**WHO? OR WHAT, IS THE
NEWEST, MOST BREATH-TAKING,
MOST SENSATIONAL
SUPER HERO OF ALL...?**





"IRON MAN!"

HE LIVES!
HE WALKS!
HE
CONQUERS!



Art by Don Heck & Jack Kirby
from *Tales of Suspense* #39 (March 1963)



Art by Gene Colan & Frank Giacoia, from *Iron Man* #1 (May 1968)

Iron Man first appeared in the March 1963 issue of *Tales of Suspense*, #39, with a cover trumpeting the arrival of a metal-clad monster that “Lives! Walks! And Conquers!” Longtime readers of the title would have been excused for thinking Iron Man was simply the latest creature feature in the book’s usual retinue of shambling swamp beasts and menacing space aliens. But while his first story may have been a concise 13-pager

in a fading monster mag, Iron Man’s debut was a scintillating blockbuster for all time.

In that inaugural story, we meet the titular character and his alter ego, weapons developer Tony Stark. A brash and debonair multimillionaire — in today’s money, a multibillionaire — Stark was without peer as the most sophisticated of all Marvel’s leading men. But underneath this sophistication lay a factor common in Stan Lee’s characters: an all-too human frailty. Spider-Man’s weakness was his overwhelming guilt, while

life with the Fantastic Four was fraught with interminable family squabbling. Meanwhile, Daredevil leaped across the rooftops of Hell’s Kitchen while 100 percent blind. Tony Stark’s weakness was his heart. A bum ticker that would have been a death sentence if not for his unmatched ingenuity.

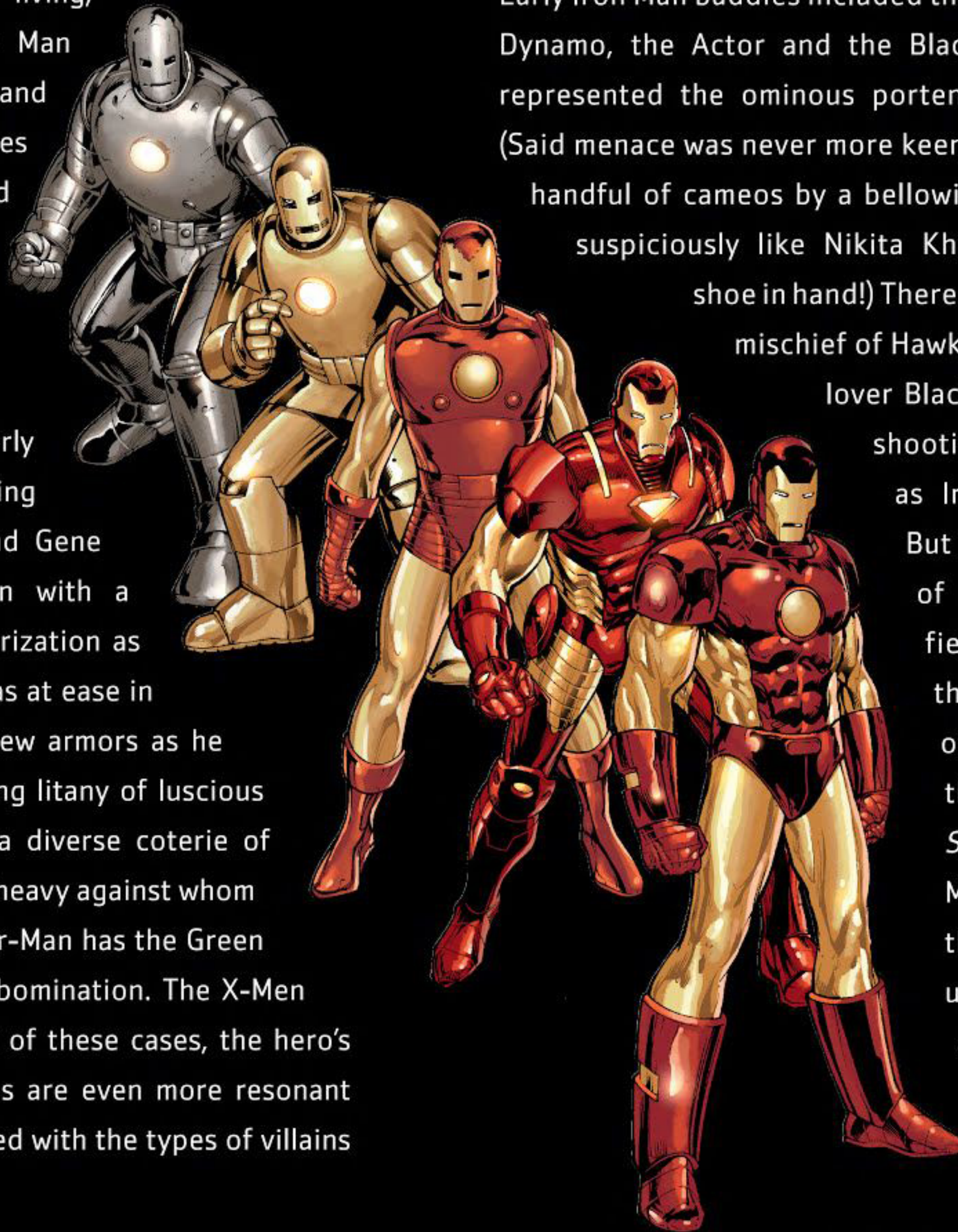
How it got to be that way is the cornerstone of one of Marvel’s most engrossing origin stories: While on a campaign to market a new line of weapons to U.S. military commanders in Vietnam, Stark is knocked for a loop by an enemy landmine. A piece of shrapnel wedged near his heart draws ever closer with each beat. Forced into servitude by the tyrannical camp commander and made to build a weapon that can be used against American forces, Stark surreptitiously crafts the life-saving armor that will help him — and his fellow prisoner, Yinsen — keep the shrapnel at bay and allow them to escape. Though not able



Art by Gene Colan & Gary Michaels, from *Tales of Suspense* #78 (June 1966)

to save Yinsen's life, the "living, walking, conquering" Iron Man upstages his wicked captor and returns to the United States to symbolize America's Cold War capacity to outthink, outdesign and outsmart the Soviet war machine.

Stan Lee and his early collaborators — including Don Heck, Larry Lieber and Gene Colan — gifted Iron Man with a strong, distinctive characterization as a swinging, smart playboy, as at ease in his workshop developing new armors as he was charming a never-ending litany of luscious ladies. Iron Man also had a diverse coterie of villains. Every hero needs a heavy against whom he can prove himself. Spider-Man has the Green Goblin. The Hulk has the Abomination. The X-Men have Magneto. And in each of these cases, the hero's many layers and dimensions are even more resonant with readers when contrasted with the types of villains he attracts.



Early Iron Man baddies included the cold warriors the Crimson Dynamo, the Actor and the Black Widow — all of whom represented the ominous portents of the Soviet menace. (Said menace was never more keenly observed than in a small handful of cameos by a bellowing bureaucrat who looked suspiciously like Nikita Khrushchev, sometimes with shoe in hand!) There was also the arrow-slinging mischief of Hawkeye — who, in tandem with lover Black Widow, would later start shooting the straight and narrow as Iron Man's fellow Avenger. But perhaps the biggest villain of all was the Mandarin, a fiendish mastermind from the Far East. Also indicative of the communist paranoia that permeated *Tales of Suspense's* comics fare, the Mandarin was a constant thorn in Iron Man's side, using his ten rings of power and martial-arts prowess to attack the armored Avenger from his exotic Eastern homeland.

Art by Carlo Pagulayan, from
All-New Iron Manual (July 2008)

THE ART OF IRON MAN

As the 1960s concluded, Iron Man was turned over to a stable of new creators — particularly artist George Tuska, who largely helped define the look of the character during the next decade. At the same time, Iron Man was intensely active in the Avengers, the wildly popular team comic that united ol' Shellhead with Marvel's elite super heroes like Captain America, Thor, Giant-Man and the Wasp. Oftentimes in a leadership position during his decades-long tenure with Earth's Mightiest Heroes, Iron Man was at the tip of the spear in some of their most incredible adventures.

By the close of the 1970s, a team of bright creators explored the inherent pathos of the freewheeling Tony Stark. Writer David Michelinie and artist Bob Layton addressed the raw realism of alcoholism in the all-time classic "Demon in a



Art by George Pérez, from *Avengers* #25 (February 2000)

Bottle" storyline, in which Tony found that the greatest villain in his life was the ravaging beast of addiction. This set the stage for one of his most heroic struggles: the long road to recovery.

In the meantime, the corporate intrigue that the book was known for hit its apex with the coming of Obadiah Stane. There is no better mirror image to the sacrifice and soul of Iron Man than the master manipulator Stane. An intense animosity toward his business counterpart Stark set the stage for his emergence as the Iron Monger. Tony's technology was always something that could be — and would be — exploited by vengeful villains like Stane.



Art by Adi Granov,
from *Iron Man* #4 (October 2005)

Echoing the heroic struggles of Marvel's wall-crawling Spider-Man, there are two paths available to those presented great power: Tony Stark's path was decided after an epiphany to use his incredible genius for the world's betterment. Stane's path was decided when he prized seizing power over maintaining his humanity. Their final clash in the pages of *Iron Man* is legend.

Iron Man's battle with the Iron Monger foreshadowed the coming of the "Armor Wars," where the philosophical questions of Stark's complicity as a weapons manufacturer were first posed. When Tony's technology is further co-opted by forces bent on destruction, Iron Man goes on a mad dash across the world to destroy any instance of his armor proliferation — whether wielded by foe or friend.

Other major stories and characters highlight 45 years of tales of suspense, including Iron Man's many tête-à-têtes with Doctor Doom, the evolution of his friendship with pilot Jim Rhodes, the coming of War Machine and more classic adventures with the Avengers than can be counted. Recent triumphs have included the definitive mark made by Warren Ellis and Adi Granov's "Extremis" run, which helped inform the visual look for Jon Favreau's feature film. Through it all, Tony Stark has proven to be one of

Marvel's deepest and most interesting characters, and his heroic alter ego has inspired talented creators and excited legions of fans. And it's amazing to think that all this history has been made by a guy with no super-powers at all. Just a suit of armor and a big brain housing designs for the world's brightest possible future. For a man of armor, Tony Stark has always exhibited an unalloyed heroism.



Art by Carlo Pagulayan,
from *All-New Iron Manual* (July 2008)

CHAPTER 1:

THE MANY ARMORS OF IRONMAN

The most important thing about *Iron Man* is obviously the special effects, right? The sizzle of the repulsor rays as they lance through the stillness of the air, the shooosh of his contrail as he leaves fighter jets in his supersonic dust, the raw power of his ultra-modern tech... the glitz, right? Well, in a movie like *Iron Man*, all that stuff is indeed important to get right. But achieving the authenticity and wow of the visual effects is all part of a process, one the film's crew knew full well in advance had a more down-to-earth mandate: Before they put the armor outside the man, they must find the heart inside the man.

The most important component a movie like *Iron Man* has to have is something that can't be conjured up on a design table: It's got to have heart. As soon as Jon Favreau signed on to helm Marvel's first self-financed blockbuster film, a script began development that went straight for Tony Stark's humanity. Delving deep into Iron Man's rich history with the film's producers, Favreau fleshed out the character motivations that would form the

basis of his art team's approach to design.

Now that the unbelievable success of *Iron Man* is behind us – and with full awareness that it has turned into a franchise-worthy phenomenon – *The Art of Iron Man* traces the many elements of the film's design process. After the movie's emotional core was figured out, it was left to the film's art crew to start building the armor from the ground up. In this chapter, you'll see the work of the most talented conceptual artists in the business as they develop the many armors of Iron Man. Along the way, you'll witness the evolution of the armor – from concept design to sketches to 3D modeling to the final construction of the suit – more as a process of human refinement than anything else. Reading between the lines of the many fine artists who worked on this suit of armor, you will hear the echoes of Favreau's mission statement: "Tony Stark has a heart. Now let's go build something around it!"





Art by Adi Granov



The Mark II and Mark III armor designs were well under way when concept artist RYAN MEINERDING came on board the *Iron Man* team. He immediately got to work on concept art for the Mark I (above, far right on page 25), Tony Stark's seminal suit of armor built in the Cave, and the one suit that would have to exemplify, more than any other, the extent of Stark's grit and resourcefulness.



The earliest renditions of Meinerding's concept art were grounded in the notion that the Mark I was assembled from the Cave's "box of scraps." Director Jon Favreau, inspired by Adi Granov's art in the *Iron Man* comic, requested keyframe art (a drawing that captures a certain design element of a character or setting, above) to show off flamethrowers implanted in the Mark I's wrists.



Having difficulty establishing the right point of view for this sequence, storyboard artists turned to Meinerding's keyframe art (above) for inspiration. MEINERDING: "This image helped them understand that you could show this sequence from the terrorist POV and have them be scared of the Mark I."



At the time of the Mark I's development, it was undetermined whether the film was going to have scenes showing the armor's construction. Thus, Meinerding came up with several illustrations (below, left) that implied Stark's creative solutions using the limited materials he had at hand.





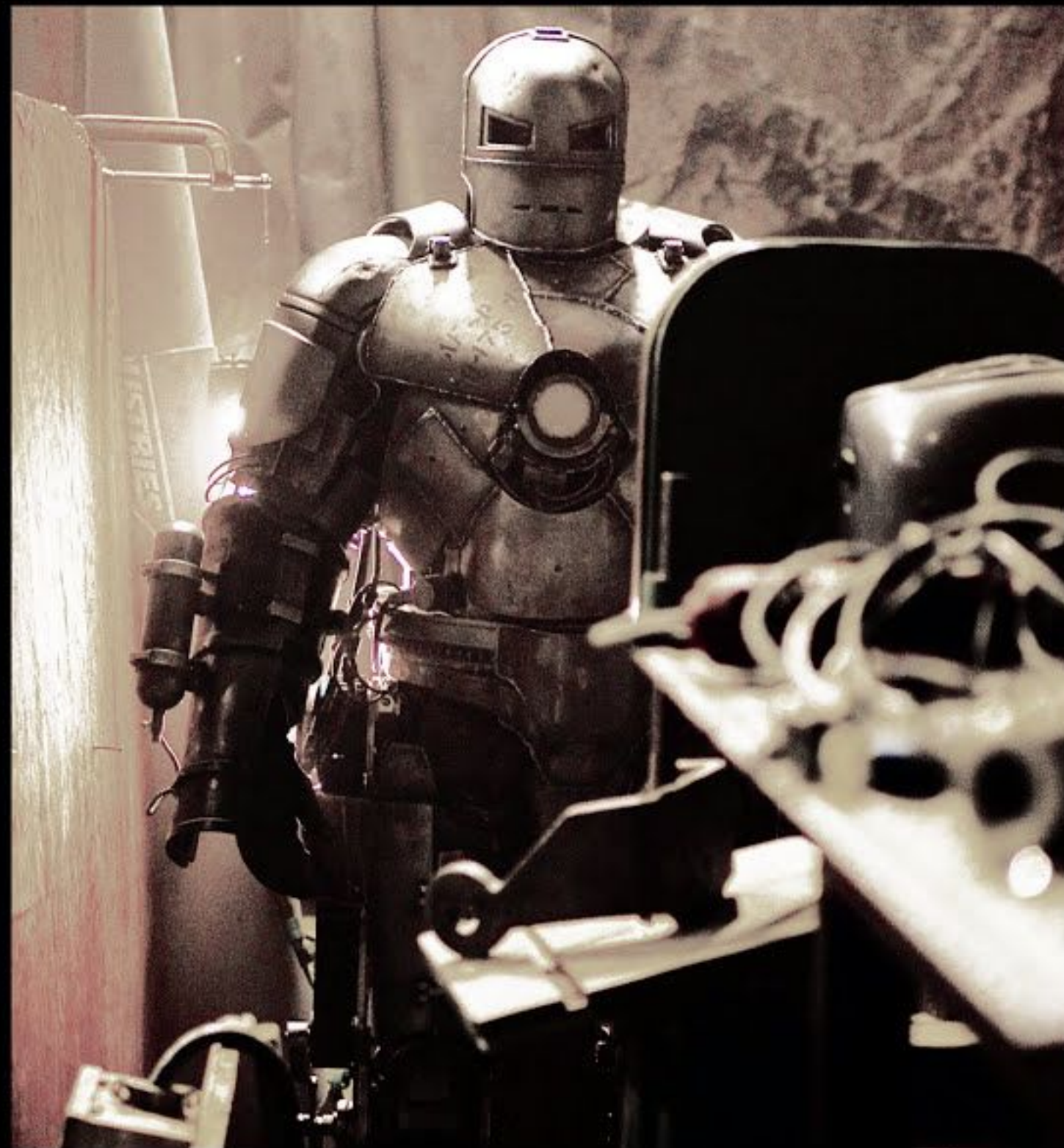
The outside of the armor was not Meinerding's only concern. It was crucial to design Stark's undersuit (left) to provide a supporting framework for the armor plates that rest on top. Meinerding also delivered colored concept art (page 29, left) to assist costume designers and makeup artists in their work.



MEINERDING: "This keyframe art (page 28, right) was an early version of the repulsor technology that was set in Stark's chest cavity. Producers wanted a rough idea of what the RT would look like popping out of his chest." Meinerding's visceral characterization — a hallmark of his approach to keyframe art — gave the director and scene designers an artist's insight into the character's emotional state.



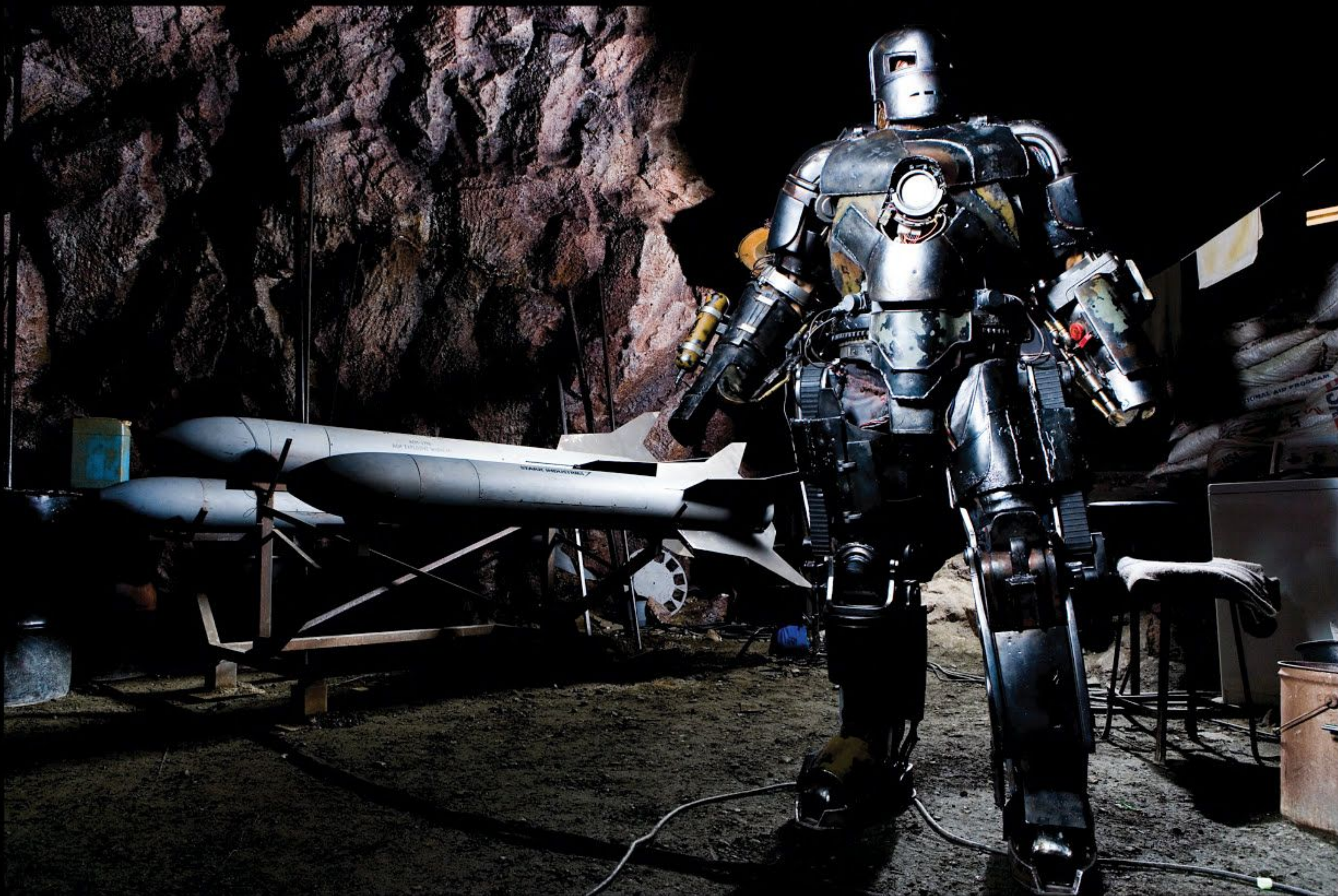
Above: Maquette created by Stan Winston Studio after the final Mark I design had been fully developed.



As the Mark I reached the final production phase, Suit Effects Supervisor SHANE MAHAN of Stan Winston Studio realized he was bringing to fruition not just a suit of armor but also the mythology of a legendary comic-book hero. The first production still released from the film (above) certainly got an overwhelmingly positive reaction from the fans. MAHAN: "The concept was that he's in captivity, and he has to build an escape suit with only his wits and the things that are around him: hunks of metal, parts of bombs — just a complete hodgepodge of pieces."

Top left: Fully assembled unpainted Mark I armor (Stan Winston Studio)

Top center, left: Final Mark I armor (Stan Winston Studio)



This is the final version of Mark I on the set with a stunt actor inside. The Mark I armor is the culmination of Tony Stark's dogged refusal to give up under the duress of captivity and with his heart tied to a car battery. MEINERDING: "The

design idea was to go for simplicity. It was all based on the reality of having to build it in the Cave, using the Stark technology being stockpiled by the terrorists. Bits and pieces of his weapons were to be visible in the design."



The Mark II suit was Stark's first attempt at Iron Man armor from the comfort and capability of the Workshop. Concept artist PHIL SAUNDERS' expertise gained from years in the automotive industry added a practical sensibility to the armor's highly reflective, organic surfaces.

Left: Mark II keyframe art (Phil Saunders)

Below: Mark II concept art (Ryan Meinerding)





Left: Mark II “First Flight” keyframe art (Phil Saunders)

Below: Mark II action keyframe (Phil Saunders)

Page 32-33 sidebars: Mark II 3D model (PLF)





Above, Right: Mark II gack boots design (Phil Saunders)

"Gack" is design industry jargon that means to imply high levels of functioning through generic design details. Saunders' gack design provided Stark's boots a basic template for the high-tech framework underneath the armor plating.

Meanwhile, Meinerding crafted keyframe art (page 35, far right) that followed the construction of the Mark II, adding elements of heroism and humor to Stark's newfound obsession.

MEINERDING: "The boot test art helped set the tone for the scene, a moment where building the suit doesn't have to be a dry, scientific thing. It can be a romp."







Meinerding's concept art (above) indicates another stage in the development of Stark's propulsion thrusters.

MEINERDING: "The main thing I was trying to accomplish was to show the gigantic cables coming from Stark's RT. They imply massive power, but still it's on the road to being more miniaturized."

Right: Mark II hero shot (Adi Granov)





Above: Mark II turnaround

SAUNDERS: "The Mark II came last in development. It was essentially the Mark III repainted. We hoped to evoke a Howard Hughes-like, maverick design prototype...all hand-rolled aircraft aluminum with different shades. The pure craftsmanship of an individual, not a product of mass industry."

As the Mark II helmet neared completion, the faceplate began to take shape, as did the interior of the mask, with details of the nosepiece and eye slits coming into relief next to the bits of tech that lined the insides.

Below: Mark II faceplate and interior (Stan Winston Studio)





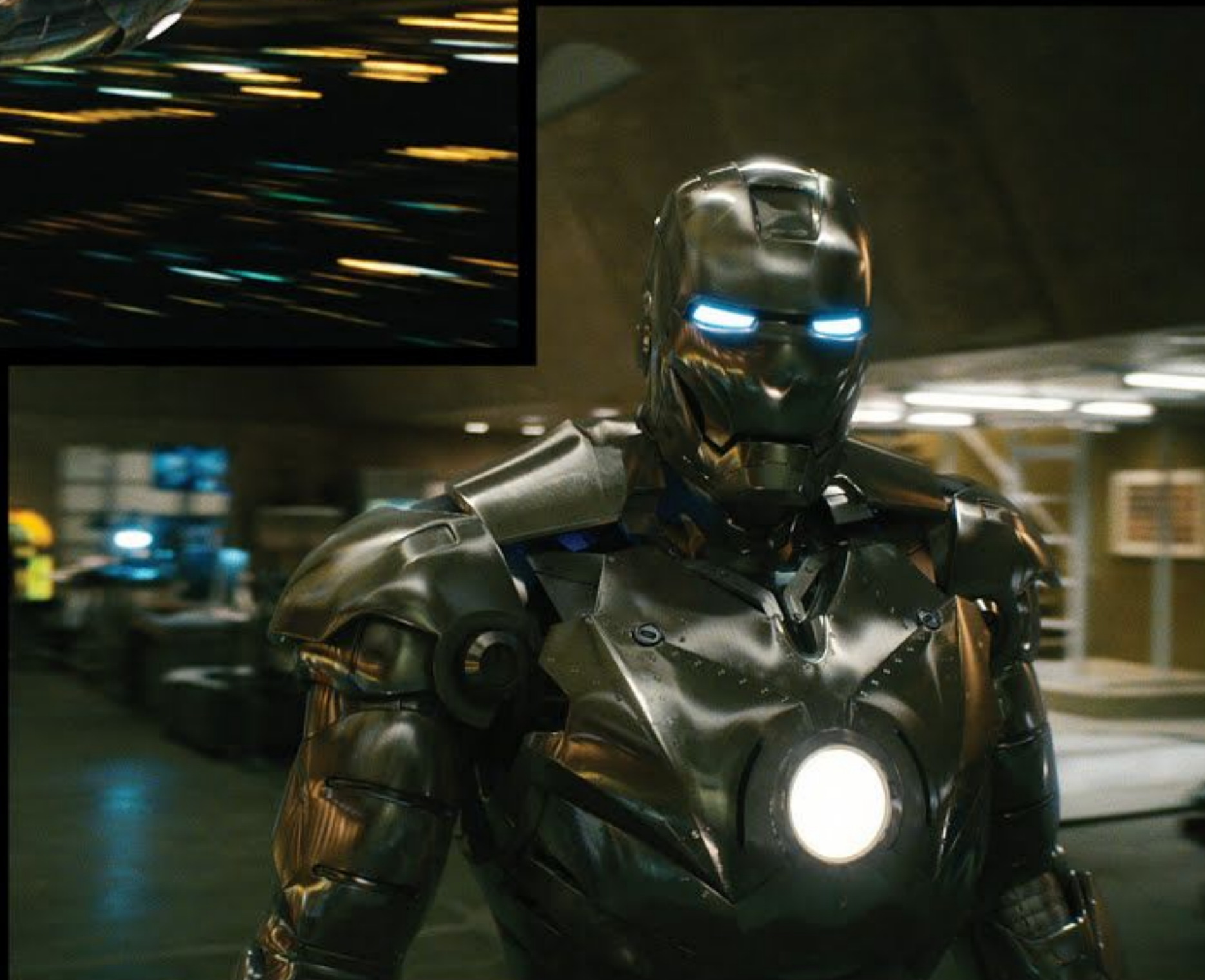


When Saunders and his team saw the initial shots of Iron Man's armor in action (left), they were sold.

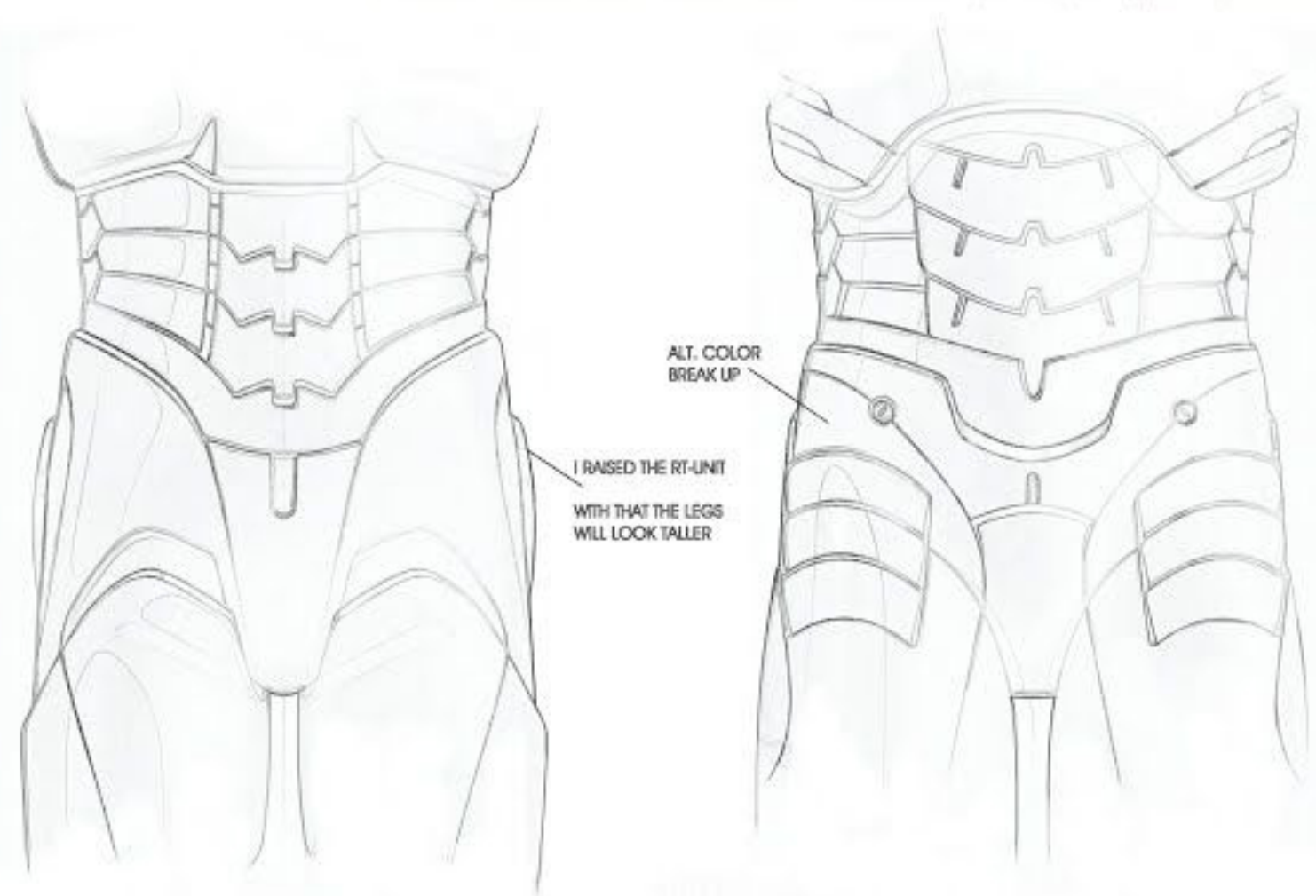
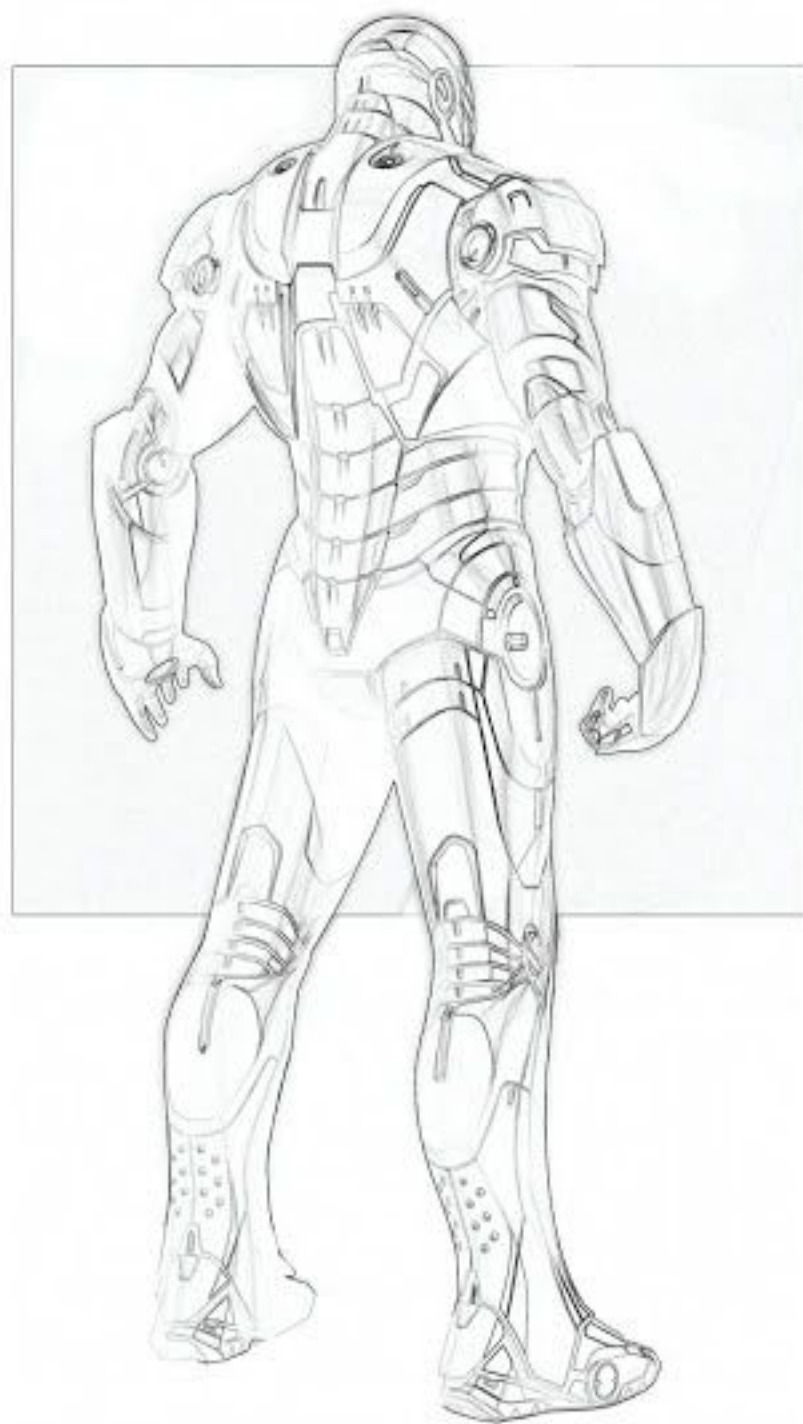
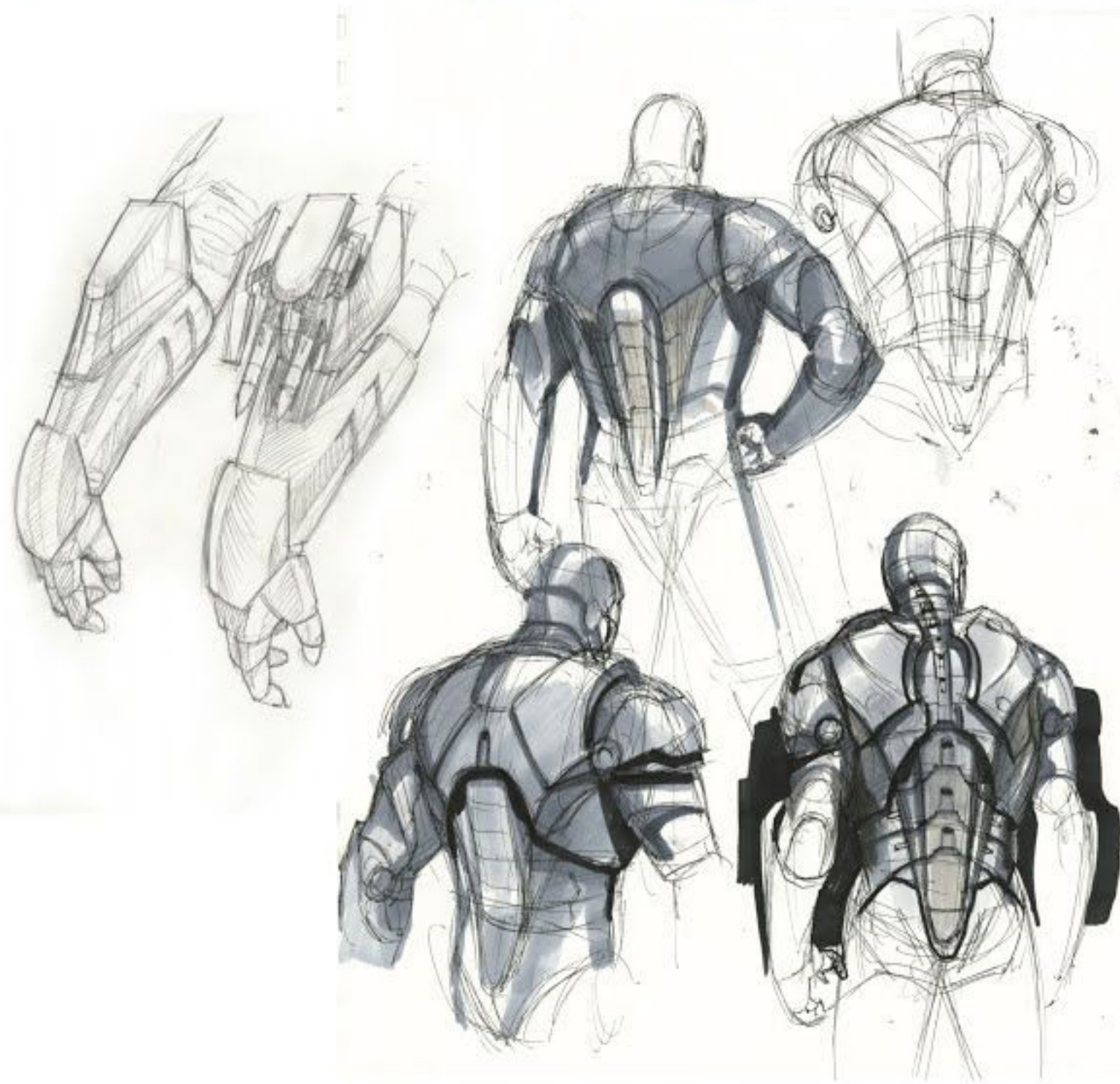
SAUNDERS: "Walking on the sound stage during the first test, we knew it was going to work. Without any digital enhancement — just by itself — the armor was very convincing. Even without a proper movement study, we knew we'd hit the mark."

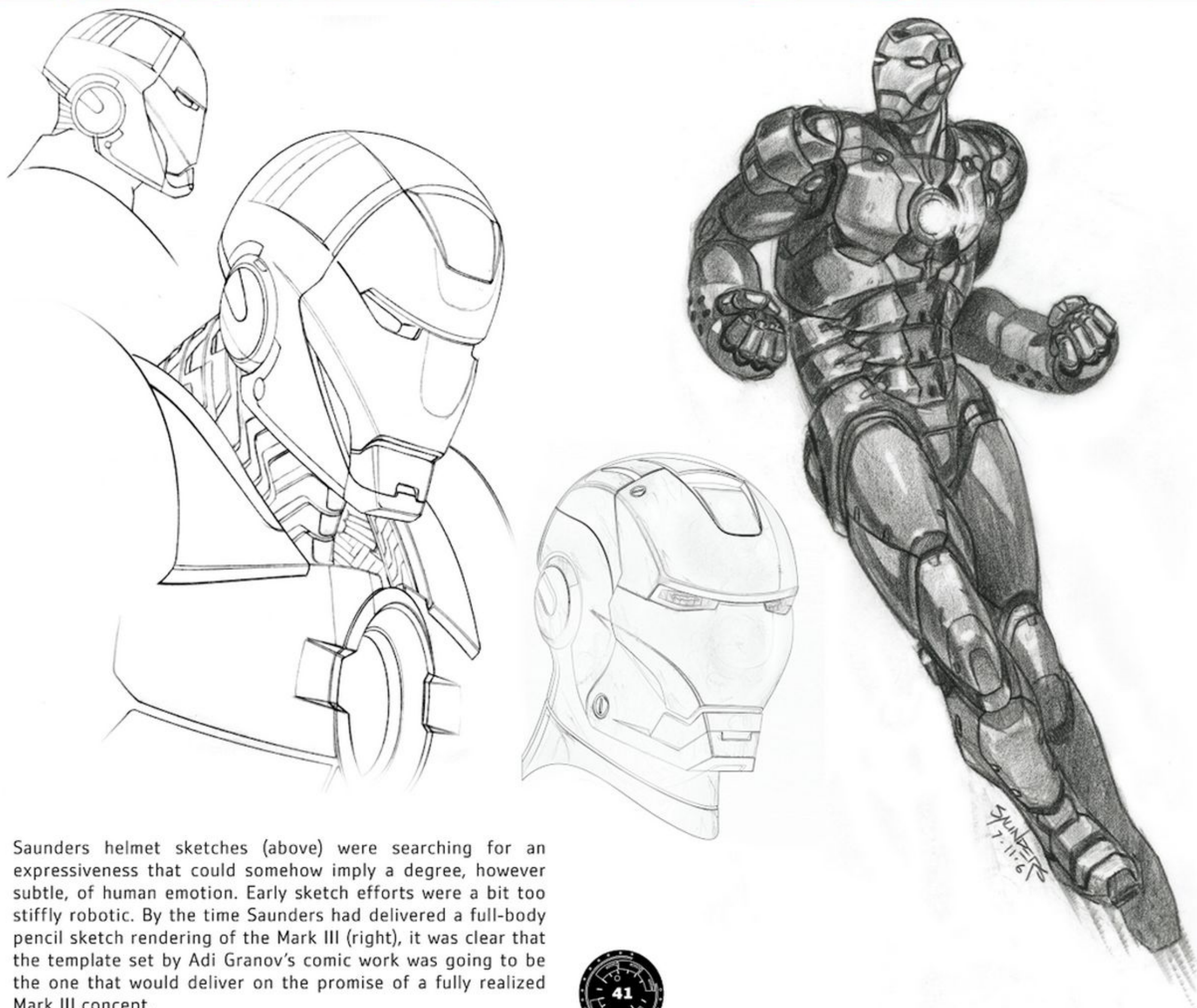
The Mark II in its final form (Page 38, left) reveals the highly refined details of the suit's rivets, its proportion, and how its joints all fit together — all elements that go to the suit's tolerance levels for moving along with the actor inside it. Of particular note are the areas on the thighs, above the codpiece and under the kneecaps, which couldn't be a part of the final practical suit design. The actor had to be able to walk in the suit, after all; in those cases, the holes were all parts of the suit that would inevitably need to be filled in with CGI.

Page 38: Final Mark II photos (Michael Muller)



The Mark III armor was actually the very first armor to begin the design process, with the Mark II and Mark I armors being reverse engineered off its success. To start the Mark III process rolling, Phil Saunders turned out several pencil sketches of armor concepts (page 40-41) that revealed the maturation of design proportions, the nuts and bolts of the suit's size and shape. The bulky calves, funky knee joints, beefy neck and weird abs of the early designs (top right) eventually gave way to more confident designs (below, right) that began to show the true essence of the armor, and its more snug and lean plating dimensions.





Saunders helmet sketches (above) were searching for an expressiveness that could somehow imply a degree, however subtle, of human emotion. Early sketch efforts were a bit too stiffly robotic. By the time Saunders had delivered a full-body pencil sketch rendering of the Mark III (right), it was clear that the template set by Adi Granov's comic work was going to be the one that would deliver on the promise of a fully realized Mark III concept.



Above: Color keyframe hero shot (Phil Saunders)

A pair of color design concepts by artist RODOLFO DAMAGGIO (page 42-43, center images) show him playing with the Mark III's chest area, offering variations on how the RT might look set in his chest. (The left pose has the RT buried behind the chest piece, the right more open.)





Phil Saunders' color keyframe (above) works to reveal the power of Iron Man's RT through the upward thrust velocity, suggested by the smoke of the contrail in his wake.





Page 44: Mark III concept art (Ryan Meinerding)

Page 45, left: Mark III, near-final version (Phil Saunders)

SAUNDERS: "This is pretty close to what the final Mark III ended up being. The only difference there is the calves, the boots and the area around the shoulders went through another evolution."

The Mark III was the final point of evolution for the Iron Man armor in the movie, the one in which he made his stand against Iron Monger. But it wasn't always going to be the final evolution. Phil Saunders had developed concept art for a Mark IV armor (page 45, right).

SAUNDERS: "Early on in development, there was going to be a big battle scene between Iron Man and the villain at the time, Crimson Dynamo. There was a sequence where Tony and Rhodey got together in the garage with a bunch of leftover weapons from the Stark warehouse and they thought they'd bulk it all onto the Mark III. The result would have been the War Machine armor."



IRON MAN



The very first concept art Phil Saunders delivered on *Iron Man* (above) was inspired by the classic red and gold color scheme of the comic book, with elements like the sleeveless turtleneck cowl and the gauntlets up to the mid-forearms forming a vocabulary that suggests thick

metal plating. Phil's second design (left) continued his nurturing of mass as part of Iron Man's form.

SAUNDERS: "The first thing I did was try to suggest that this was an armor component. It was not a lightweight flight suit."



By his very nature as a character, Iron Man is going to find his way into many a scrape. Saunders had to suggest through his design work how the literal translation of those scrapes, abrasions and scars would look on the armor. This study in armor battle damage (above) was a simple paintover of an already-existing publicity shot.

SAUNDERS: "We needed an idea of how the armor would look after Iron Monger got his paws on the hero. One of the difficulties in this was that it was going to be very expensive to create a second set of armor purely to showcase battle damage. We thought, this thing is metal, so how will it buckle when he gets punched? What will the bullet holes look like? Does the paint chip?"



So much time was spent on developing Iron Man's front view — the predominantly featured part of the armor throughout the movie — that it was easy to forget how much work needed to be done on back-armor concepts. Saunders developed these two sketches (left, below) in a bid to give an aerodynamic flair to anatomical features like shoulder blades, spinal cord and rib cage. In the end, the designs were deemed too "fishy," less aerodynamic and more aquatic-looking.





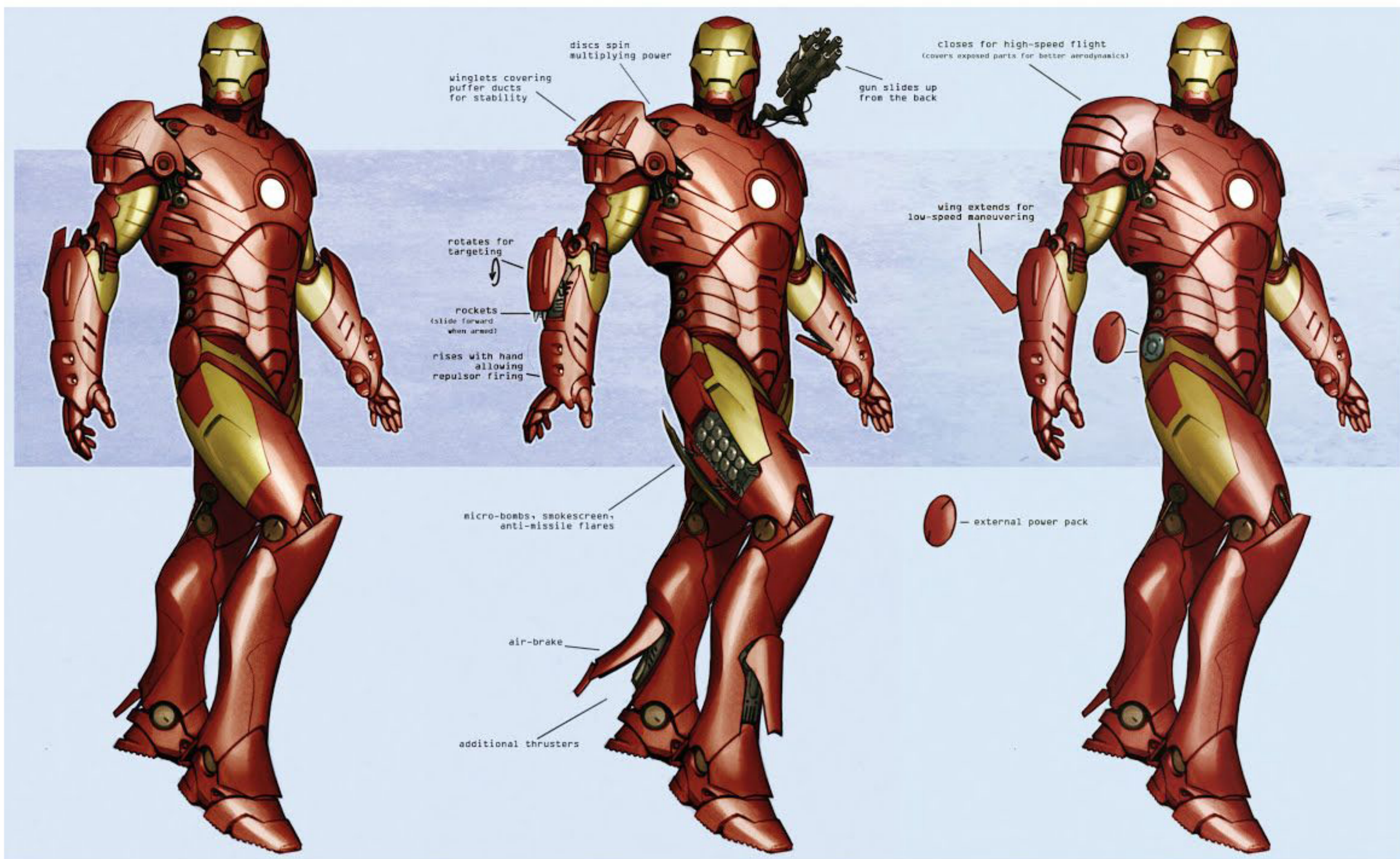
Above: Iron Man suit torso concept art (Phil Saunders)

Right: Iron Man pants concept art (Phil Saunders)

An early attempt to conceptualize how Iron Man would get in and out of his armor led Saunders and his fellow illustrators to an armor breakdown that included a minimum number of segments, including the torso and pant leggings shown here.

SAUNDERS: "We wanted to make it as quick as possible for Stark to get in and out of the suit, so instead of having boots and leggings be four separate pieces, we wanted everything from the waist down to basically be a single, organic piece. It would expand open enough that he could slide his legs into it like a really long ski boot and then it would seal up tight upon him. You would start from the bottom and work your way up so that the suit would in fact give you enough strength to put the next piece on, because this whole thing is supposed to weigh half a ton. Then you'd have the bottom torso, something a little like a tank top to be the understructure of the torso, then a clamshell that was the ribcage, and arm pieces you would put on last. Then, of course, the helmet. While we never went with this, the panel breakup was still useful when we designed the Suit Up Gantry with the robots."





Above: "Wearable aircraft" armor study (Adi Granov)

One of the first things Jon Favreau was given by *Iron Man* movie producers was the "Iron Man Bible," a visual history of all the different iconographies of Marvel's armored hero through his 45 years of history. Lots of amazingly talented comic-book artists had their work represented therein, but it was the work of Adi Granov, through his classic covers and "Extremis" storyline, that became Favreau's inspiration for the movie.

SAUNDERS: "This was the most significant sketch of the whole movie. We thought this design was the perfect expression of the term 'wearable aircraft;' it feels so very aerodynamic, so practical. The tech is plausible and yet heroic at the same time. This was the design to beat throughout the whole process."



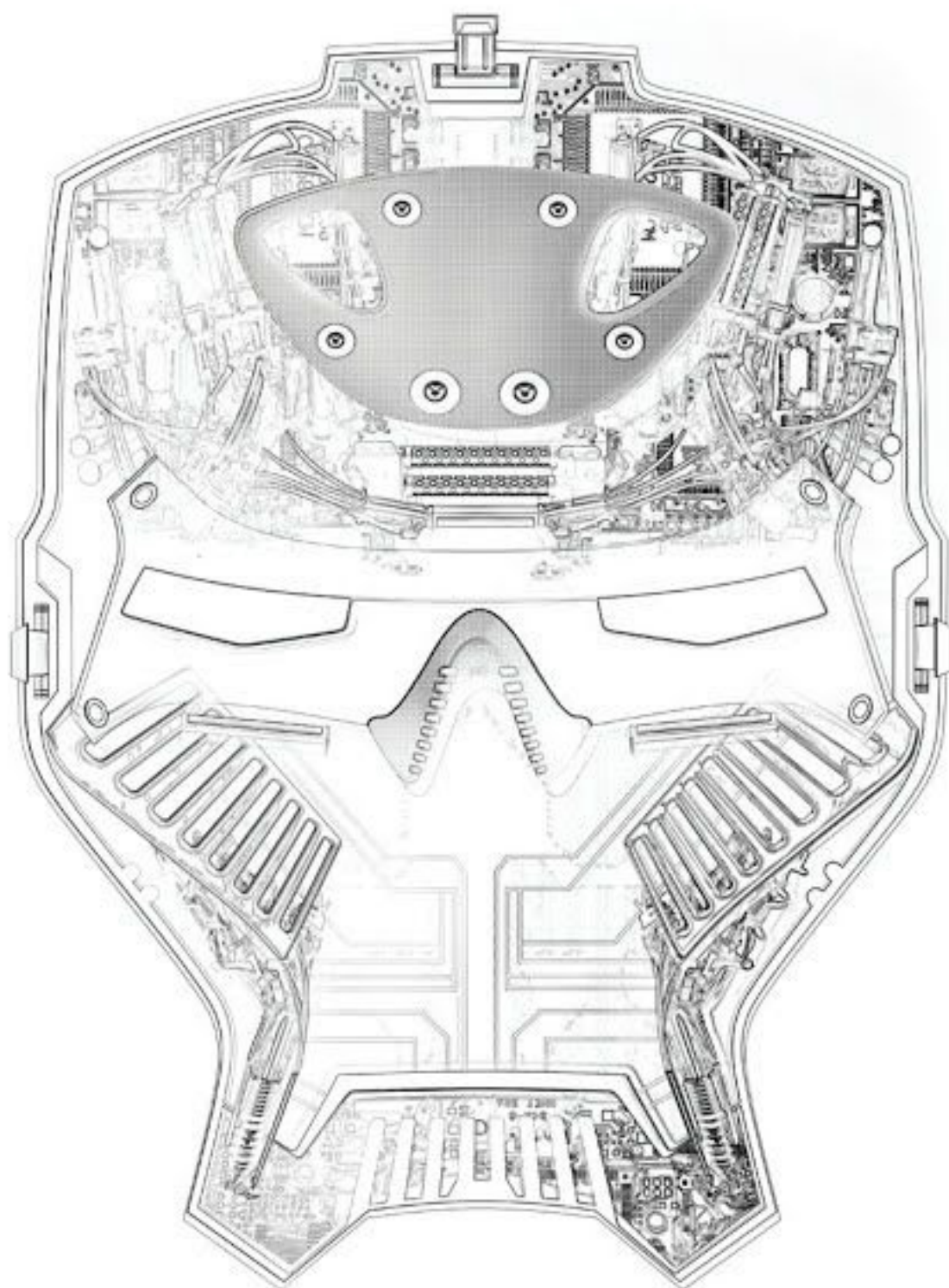
Above and left: Early Mark III visual-effects concept art (Industrial Light & Magic)

The further development of the Mark III is a not-so-subtle metaphor for the building of the “new” Tony Stark. On the surface, the Mark III represents a cutting-edge offensive weapon with no parallel. But underneath is a subtext that reveals the character’s more humane condition: The armor represents its maker’s ultimate defense against those who would steal his ideas to inflict violence and inhumanity against the world.



Left: Final Mark III maquette (Stan Winston Studio)

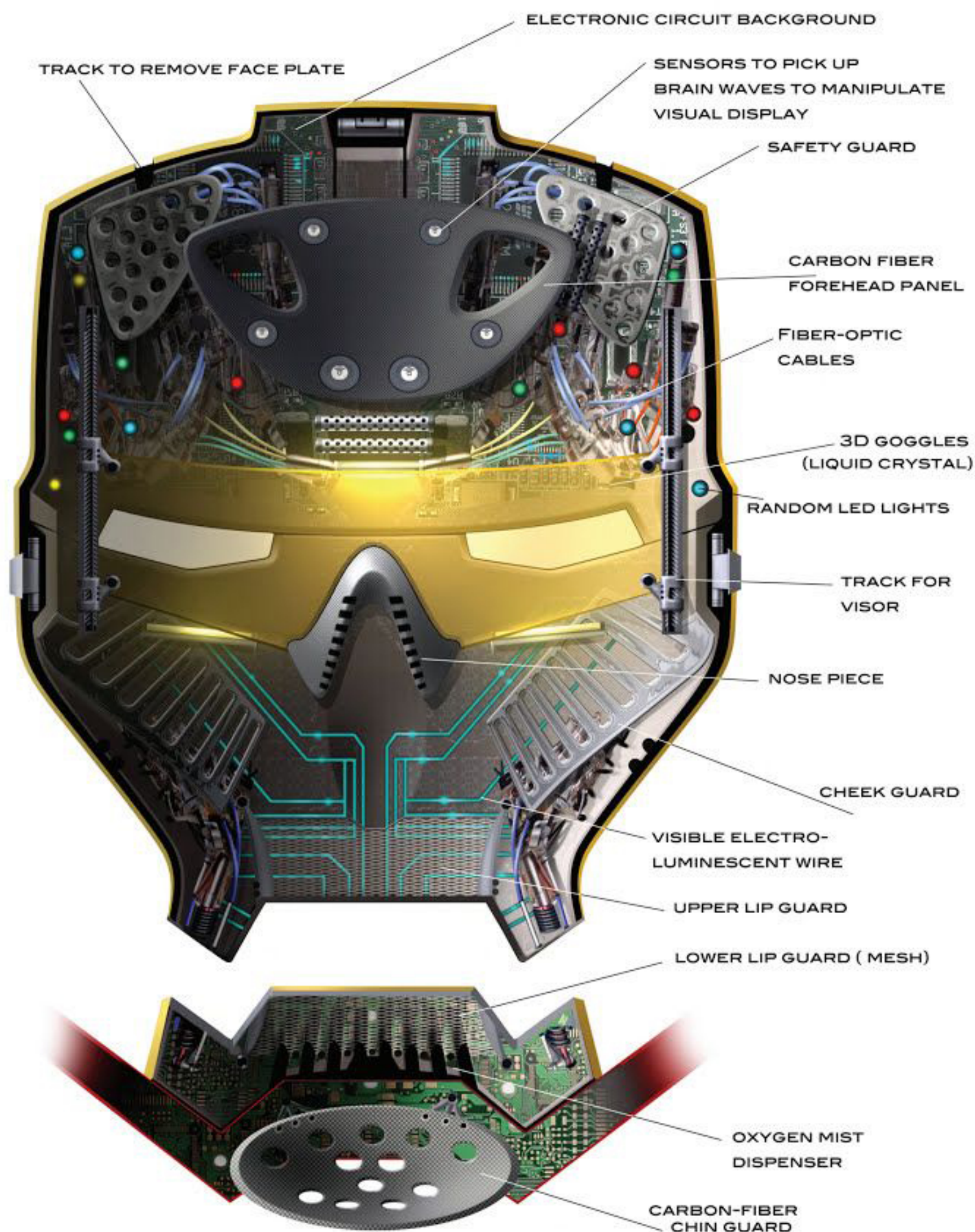
Once the final Mark III designs were settled on, they were given over to Shane Mahan and the folks at Stan Winston Studio to come up with a 3D modeled design. Perfectly accurate in scale to the eventual fully sized proportions, the maquette is where the finer points of the armor construction were developed. Working out such details on the maquette is the suit manufacturer's last opportunity before they embark on the extremely expensive proposition of building the full-size armor.

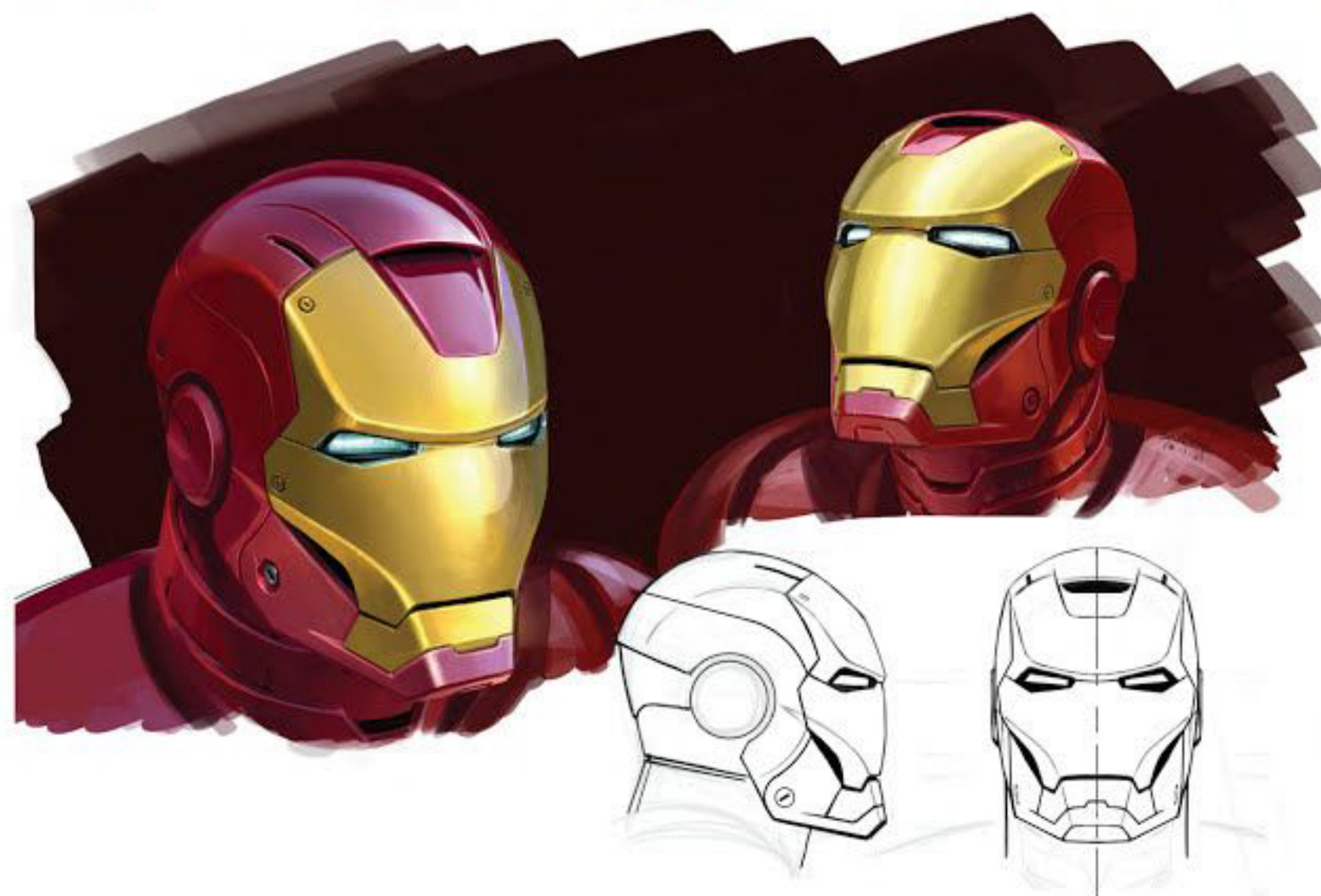


Above, right: Helmet faceplate interior, detailed design rendering (Harald Belker)

Page 53, left: Handcrafting the faceplate (Stan Winston Studio)

SAUNDERS: "We had assigned Belker the job of designing what it would look like with the face plate open, since we thought it might make a good scene to show what it looked like on the inside. It was eventually built, but we decided against showing it for aesthetic reasons. But there was value in doing this sort of thing even when it didn't show up, as it continues the conversation about the armor and how it will function."





Above: Final helmet design (Phil Saunders)

SAUNDERS: "We were going to have a sequence where we saw the helmet being removed, so one of the things we needed to explore was how to get the helmet off in any kind of an elegant fashion. It was a fairly clumsy thing to remove. We figured the neck and the back of the neck would be a digital replacement, while the top of the helmet would be easy to pull forward off of the head. Stark could touch something on his helmet, some vapor would come out of a seal, the neck would telescope down and lock into place, and the back of the neck would telescope up into the helmet, and then he'd be able to remove it in one piece."



1. GOLD: VOLKSWAGEN "COSMIC YELLOW" • RED: ISUZU "RED ROCK"



2. GOLD: MERCEDES "DESIGNO CHABLIS" • RED: TOYOTA "DARK SALSA RED"



3. GOLD: "BUTTER GREEN PRIZMTONE" • RED: "BURNT FIRE PRIZM"



4. GOLD: HOT HUES "PACIFIC GOLD" • RED: NISSAN "MERLOT RED"



Page 54-55: Paint tests for Mark II and Mark III armor (Stan Winston Studio)

To determine what the final color choices for the Mark II and III armors would be, Stan Winston Studio applied various techniques to designer Miles Tevis' helmet maquettes (a small design replica or model) to try to find the right balance of color that would look good on film.

SAUNDERS: "For the red and gold, we used brushed red plating over nickel plating. For the Mark II, we went with brushed chrome."



5. GOLD: CUSTOM CHROMALUSION #1 • RED: "BURNT FIRE PRIZM"



6. GOLD: KOSMIC KROME "GOLD EFFECT" • RED: "BURNT FIRE PRIZM"



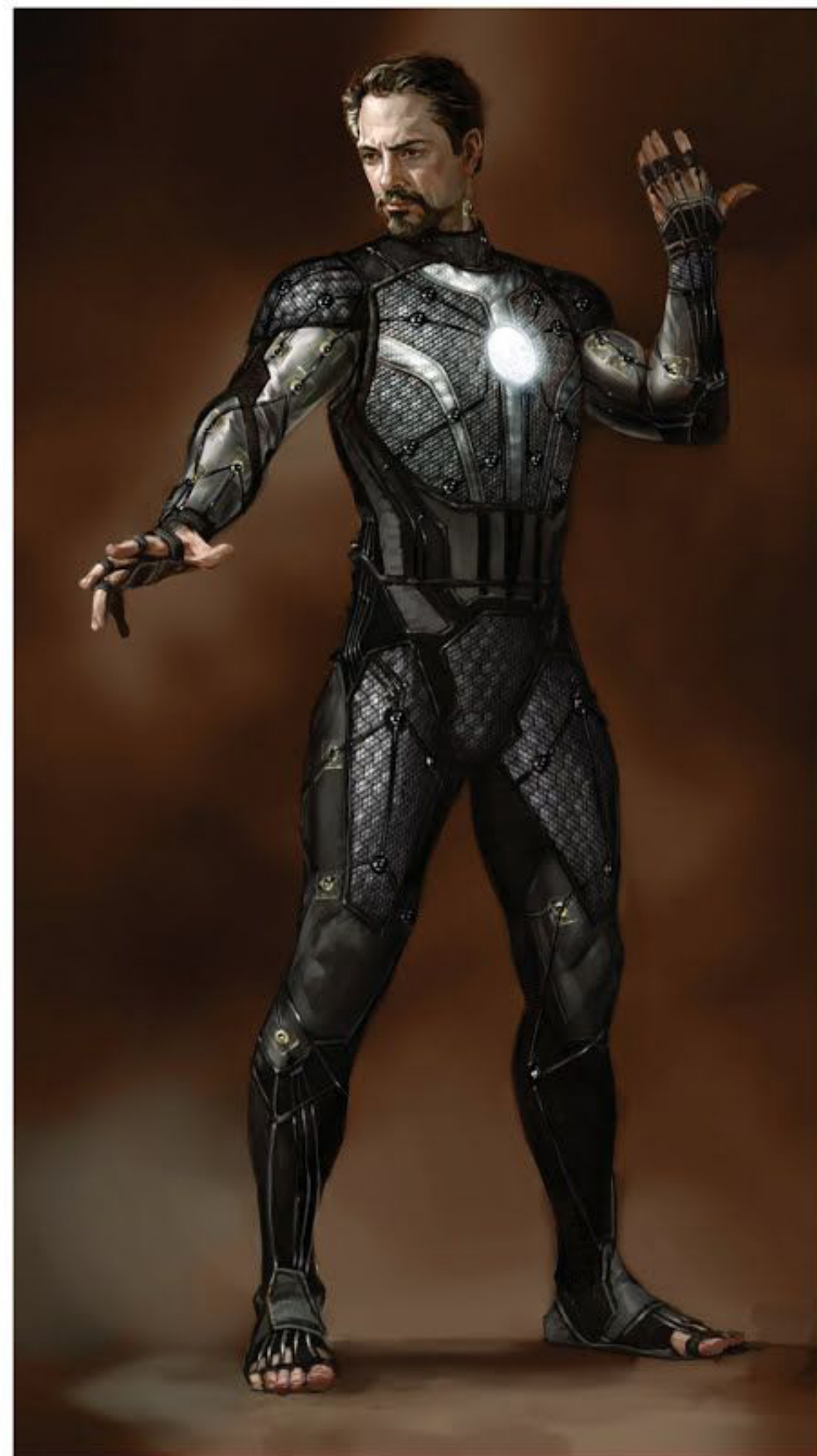
9. GOLD: BRUSHED GOLD PLATE • RED: "BURNT FIRE PRIZM"



10. BRUSHED CHROME

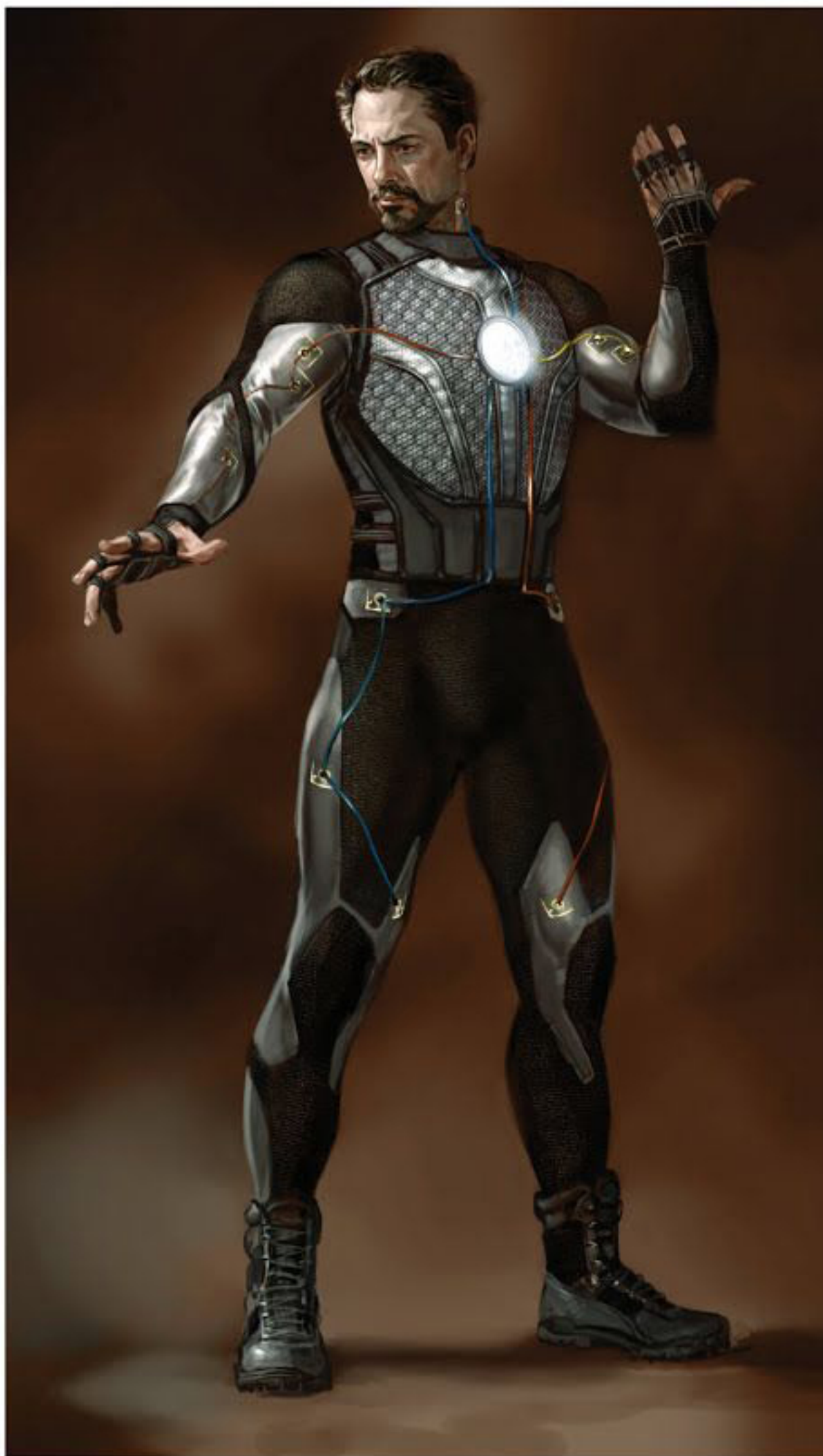


11. RAW CHROME PLATE



Top left: Battle-damaged Mark III helmet (Stan Winston Studio, from a sculpt by Miles Teves)

Bottom left: Mark III helmet models (Stan Winston Studio)



This study of an armored Tony Stark at rest in a chair (above, right) was developed for a scene later deleted, one which showed the hero exhausted from his trial by fire in Gulmira. In order to explore the extent to which *Iron Man* could be set in a more naturalistic repose, Saunders set out to build a composite illustration using photos from Stan Winston Studio, Meinerding's illustrations, and the look of Robert Downey, Jr. He added bullet holes, muzzle flare marks and other scars of battle, evoking the intensity of the Gulmira showdown.

SAUNDERS: "We asked ourselves, 'What is the armor going to look like when it's been shot to hell?'"

Page 56-57, center images: Under Armor concepts (Ryan Meinerding)



Iron Man RT Signature - Version A



Iron Man RT Signature - Version B



Iron Man RT Signature - Version C



Iron Man RT Signature - Version D



Top right: Final Mark III armor components inventory (Stan Winston Studio)

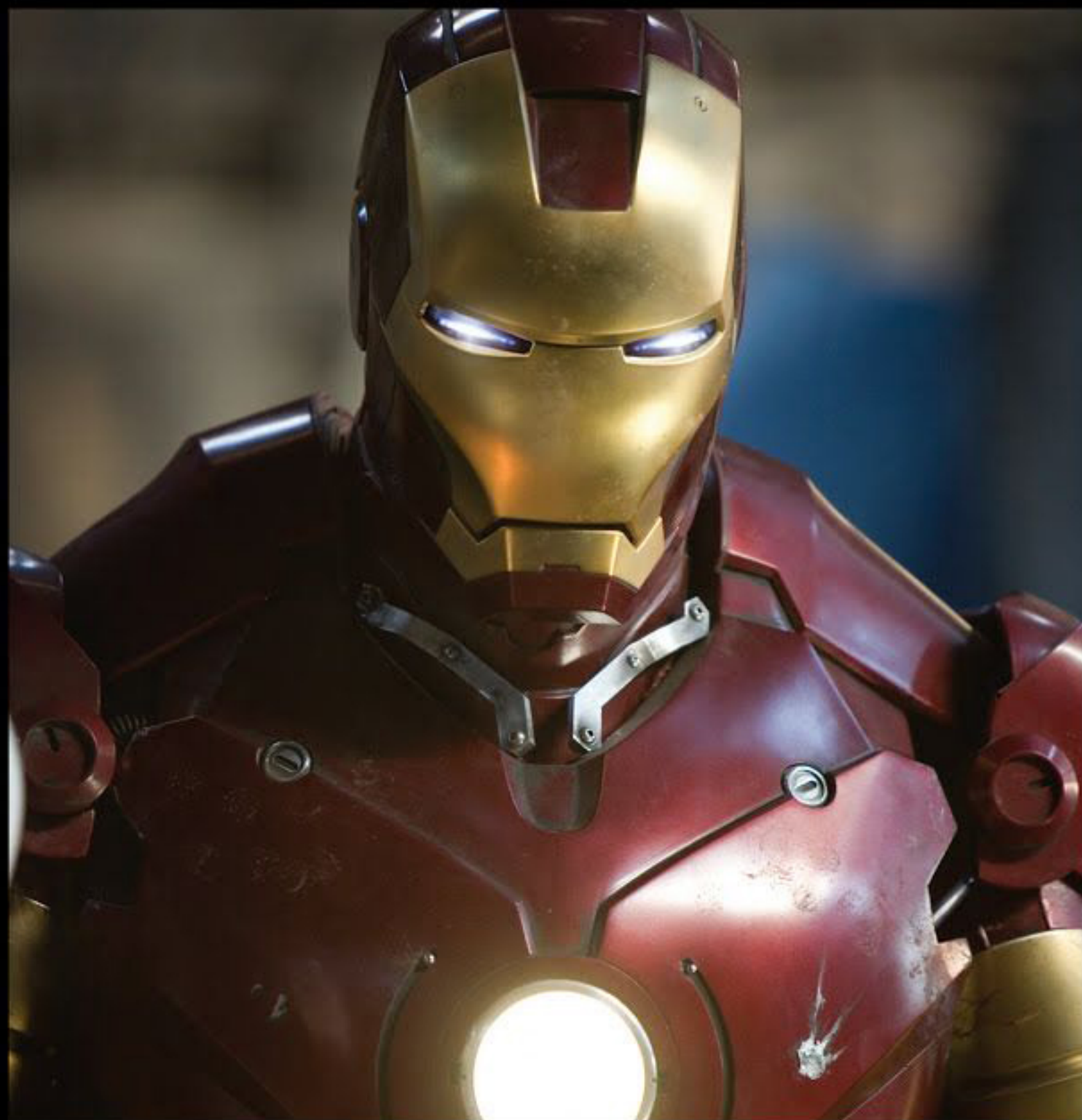
Bottom right: Movie still

Page 58-59, sidebars: 3D model paintovers (Phil Saunders concept art, Eddie Yang model)

Page 59, left: Final Mark III hero pose with stunt man







As the Mark III reached its final stage of development, it was time for the movie's star to take the predominant role in giving the armor life. In a career spent meshing top Hollywood talent with alien life forms, super heroes and dinosaurs through the magic of visual effects, the late STAN WINSTON commented on Robert Downey, Jr.'s aptitude at becoming the man in the iron mask.

WINSTON: "Robert Downey, Jr. is a consummate professional. He is so into anything that he gets involved with, and easy to work with. He is not somebody who is going to whine about the fact that he's got to be inside the suit. He knows what our problems are, he's worked with the guys very closely, and makes himself a part of the process."





MAHAN: "The Mark III had to show that it grew organically throughout the course of the film. And we did not want it to look like a 'man in a suit.' If you look at all the great men in suits from the past — C-3PO, Robocop, Bicentennial Man — there were things that we could learn from them, but we wanted to move beyond them."





Left: Stealth armor concept (Phil Saunders)

Below: Quick study development sketches (Phil Saunders)





Left: Underwater armor concept (Phil Saunders)

Below: War Machine concept (Phil Saunders)



CHAPTER 2:

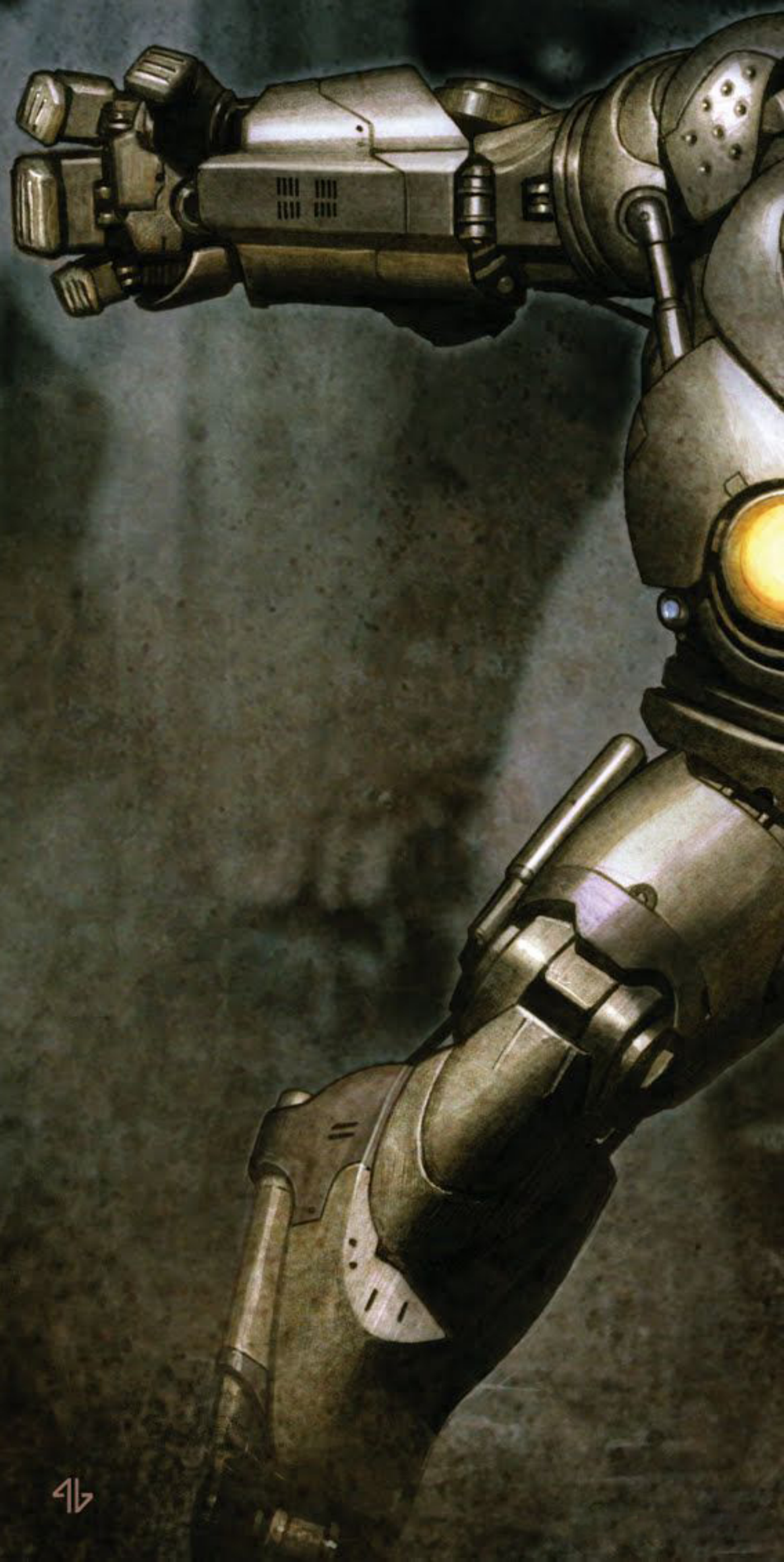
ARMOR WARS

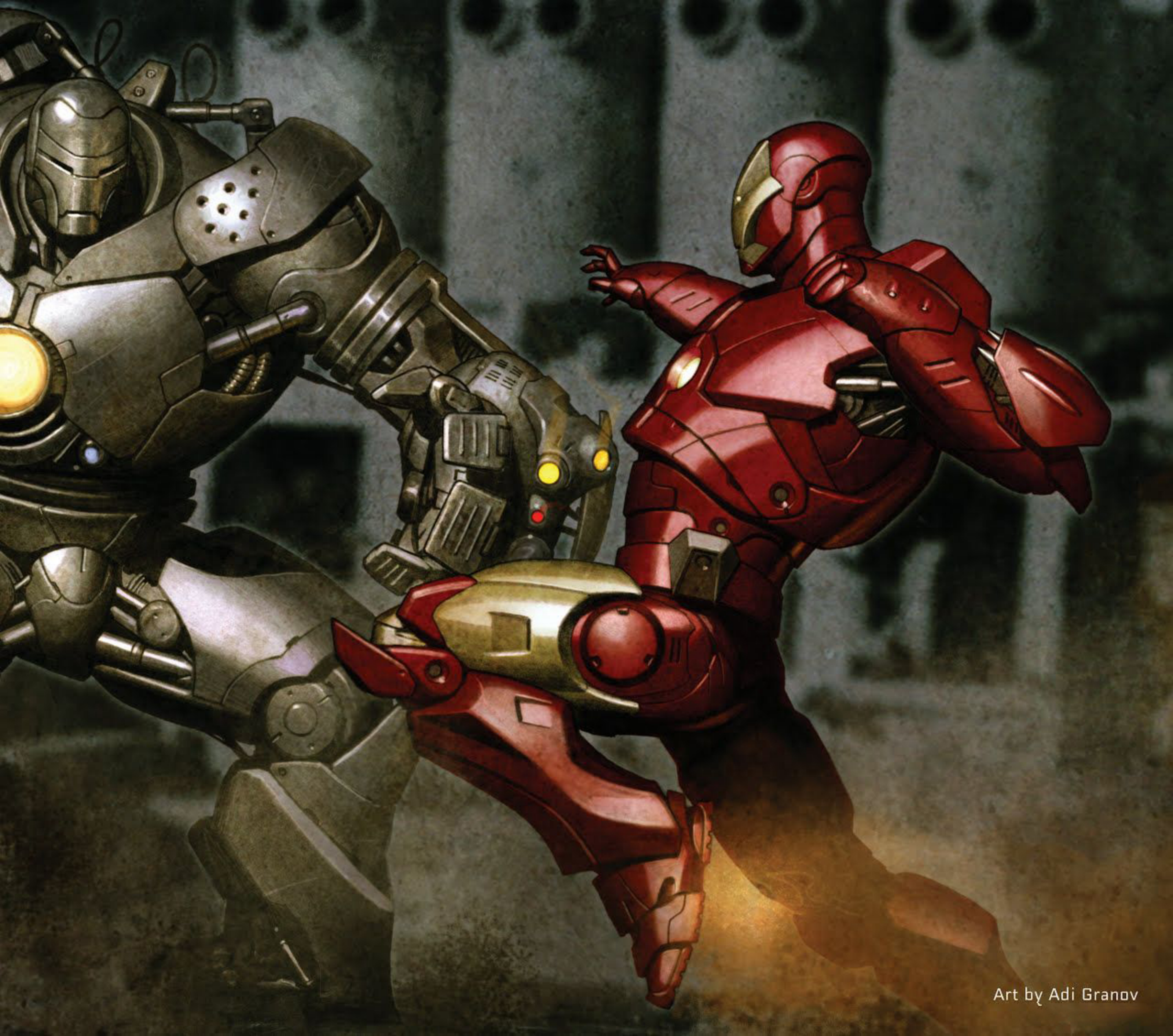
When researching the part of Obadiah Stane, Iron Man's profoundly maniacal heavy, legendary actor Jeff Bridges left no stone unturned. He not only pored through decades worth of Iron Man comics, he turned to one of the oldest books of them all. "I read the Book of Obadiah, in the Old Testament," Bridges recalls. "A lot of the story that we're telling in this movie was in that book. And I thought, 'Hmmm. I wonder if Stan Lee read that or was it just a total coincidence?'"

The 31st book in the Holy Bible and – at 21 verses – the shortest, Bridges found that Obadiah carried with it a succinct, overarching theme: Retribution is the mightiest of weapons. And for the Obadiah of Tony Stark's world, his lust to weaponize retribution would result in the film's climactic armor war, a battle waged between the Iron Man and the Iron Monger that would rage from the streets of Los Angeles to the heavens above.

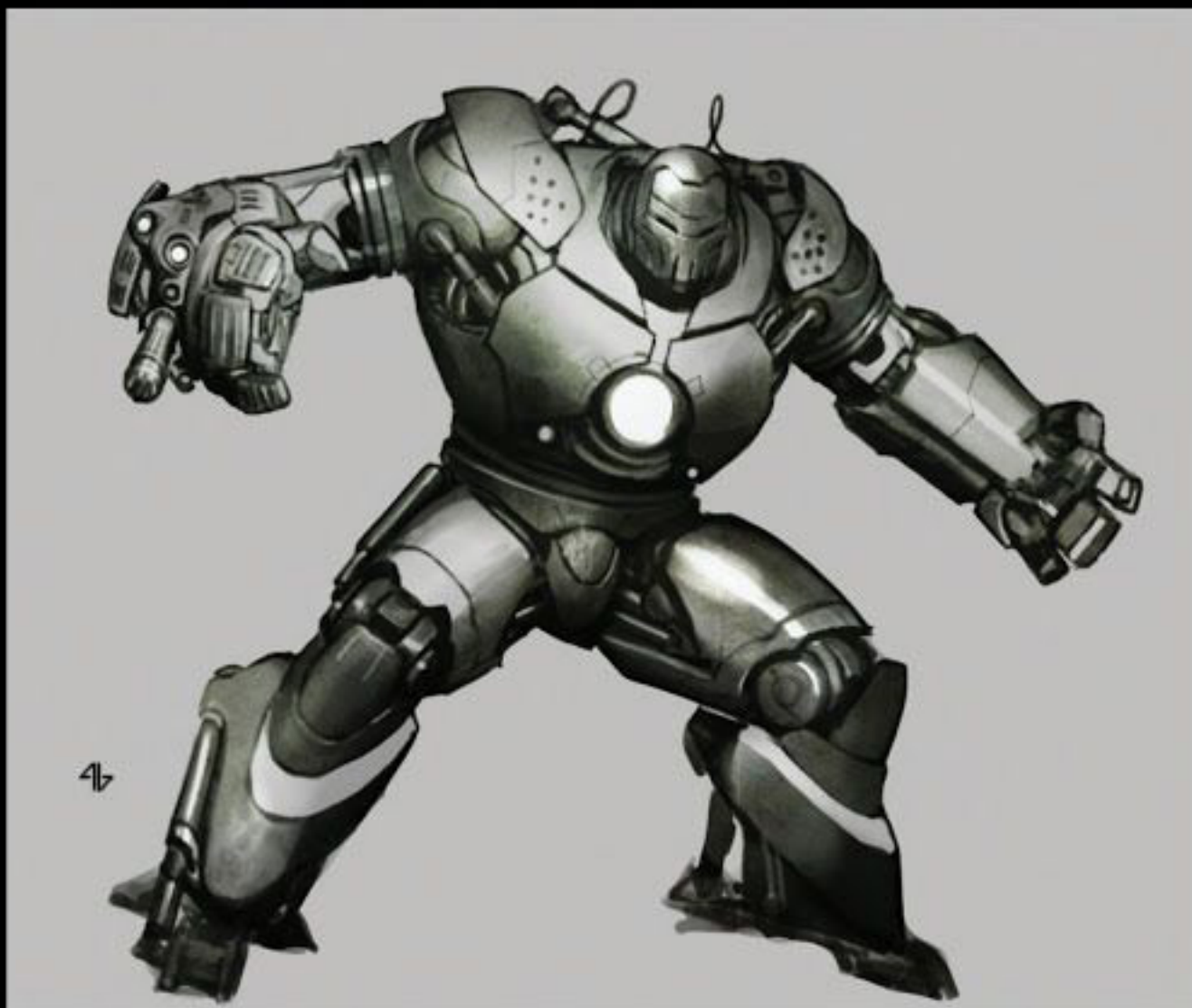
In the last chapter, we saw the development of the Iron Man armor, an awesome technological marvel fashioned by a decent man bent on bringing positive change to the world. In this chapter, we take a look at the dark side of Tony Stark's visionary achievement. Where a weapons developer's plans for good are transformed by a dark heart into something horrifically out of scale with humanity. Where retribution is turned into a monstrous weapon by a man named Obadiah.

Witness the evolution of the Iron Monger.





Art by Adi Granov





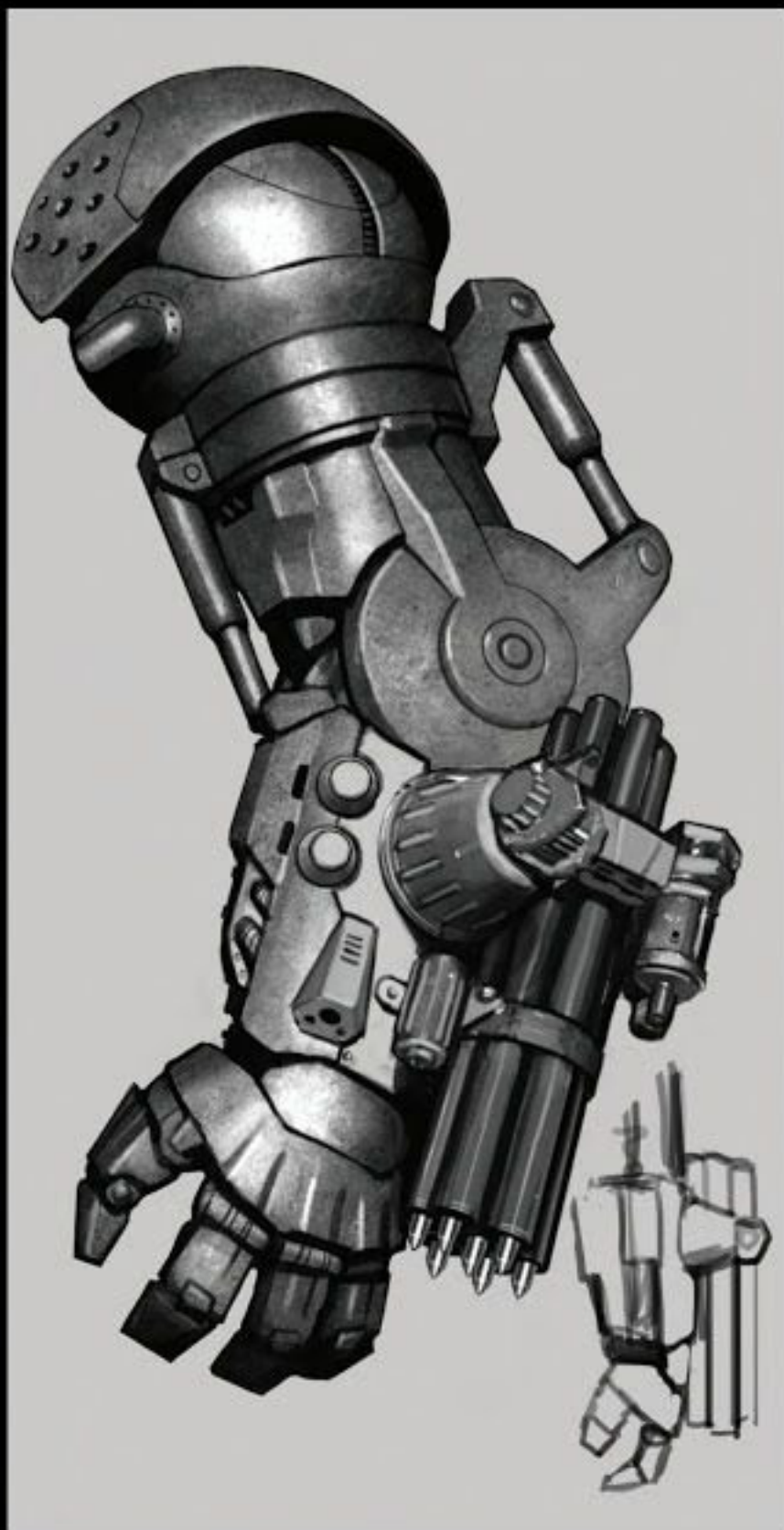
Page 66, left: Early Iron Monger armor concepts (Adi Gravov)

Page 66-67, center images: Iron Monger color concepts (Ryan Meinerding)

Above: Iron Monger character concept (Adi Granov)

Before plans for the Iron Monger were developed, the film's original script cast a Far Eastern nemesis named the Mandarin as *Iron Man's* villain. Since the Mandarin was going to develop a suit of Crimson Dynamo armor to wear, early concept art reflects the Asian ethnicity of the Mandarin.

MEINERDING: "The first week I worked on Iron Monger, things were very fluid. At the time, the villain was going to be the Crimson Dynamo. I was thinking it was going to be a man-sized suit. I didn't know it was going to be a ten-foot tall robot!"



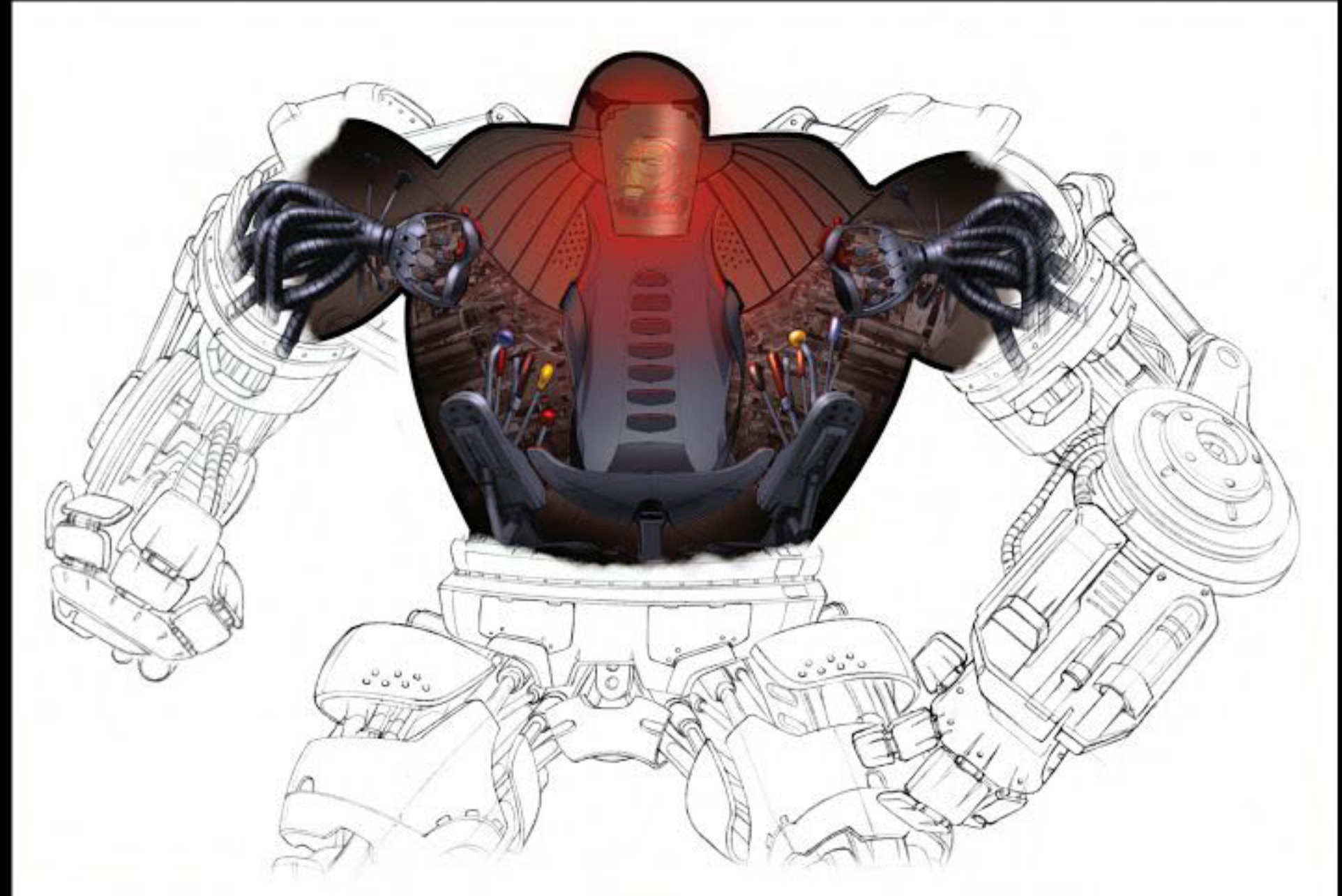
Page 68-69: Crimson Dynamo/Iron Monger concept designs
(Ryan Meinerding)



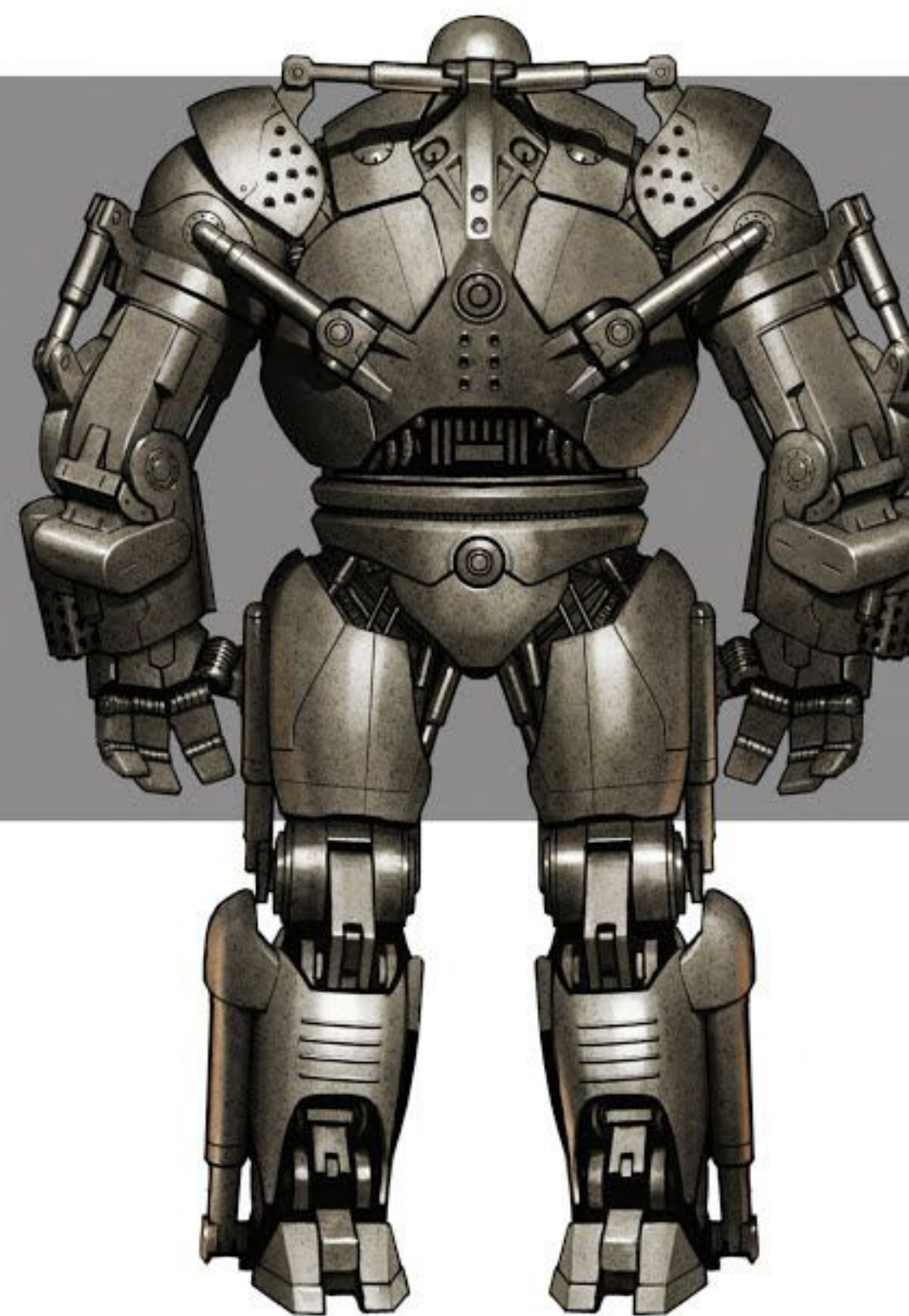
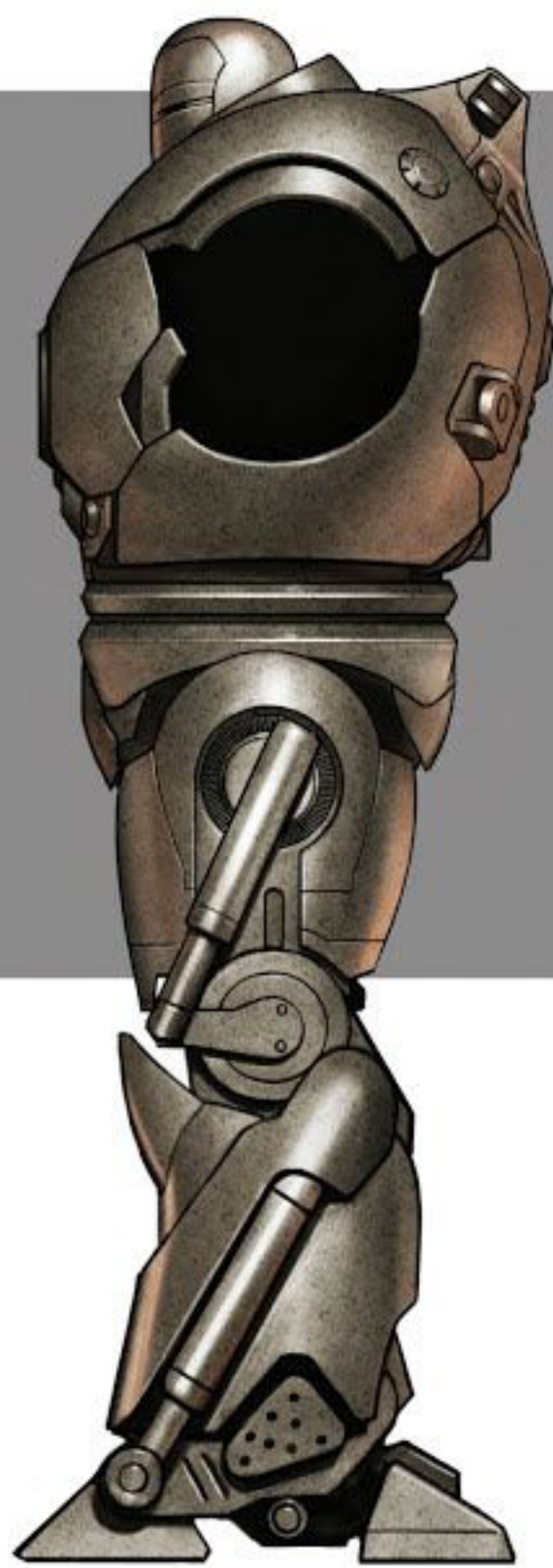
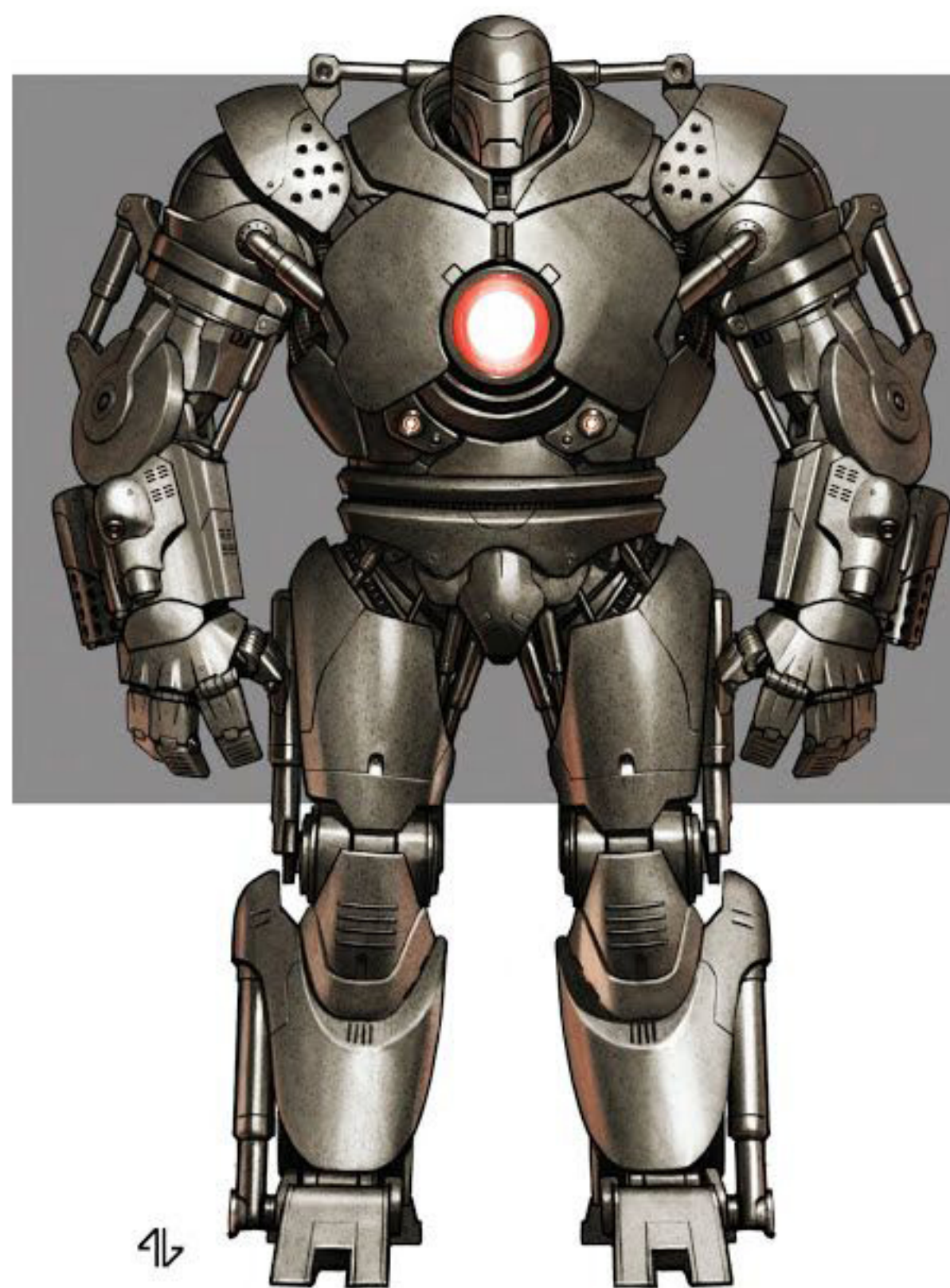
As Iron Man's villainous foil changed from the Crimson Dynamo to the Iron Monger, so too did the character's design process evolve. Whereas Iron Man's weapon components were hidden in compartments, the mini-rocket launchers mounted on the arm of the Iron Monger (above) were a brazen display of his malevolence.

Above left: Iron Monger arm concept art (Adi Granov)

Above right: Final Iron Monger arm (Stan Winston Studio)



Before the unpainted and untextured Iron Monger armor would be delivered on set (below right), just like the Iron Man armor it had to be given the utmost scrutiny for detail. In the early concept art for Iron Monger designed by Harald Belker (above right), the already completed Mark III Iron Man helmet was used as an inset image to compare the proportionality of the two different suits.





Top row: Iron Monger 3D model turntable (Stan Winston Studio)

Page 70, bottom: Iron Monger turnaround (Adi Granov)

Redesigning the helmet (left) was the last step in removing all traces of the Crimson Dynamo from the final Iron Monger helmet concept. This helmet design came about at the very last minute, a day or two before Iron Monger made his debut in front of cameras on the film set.

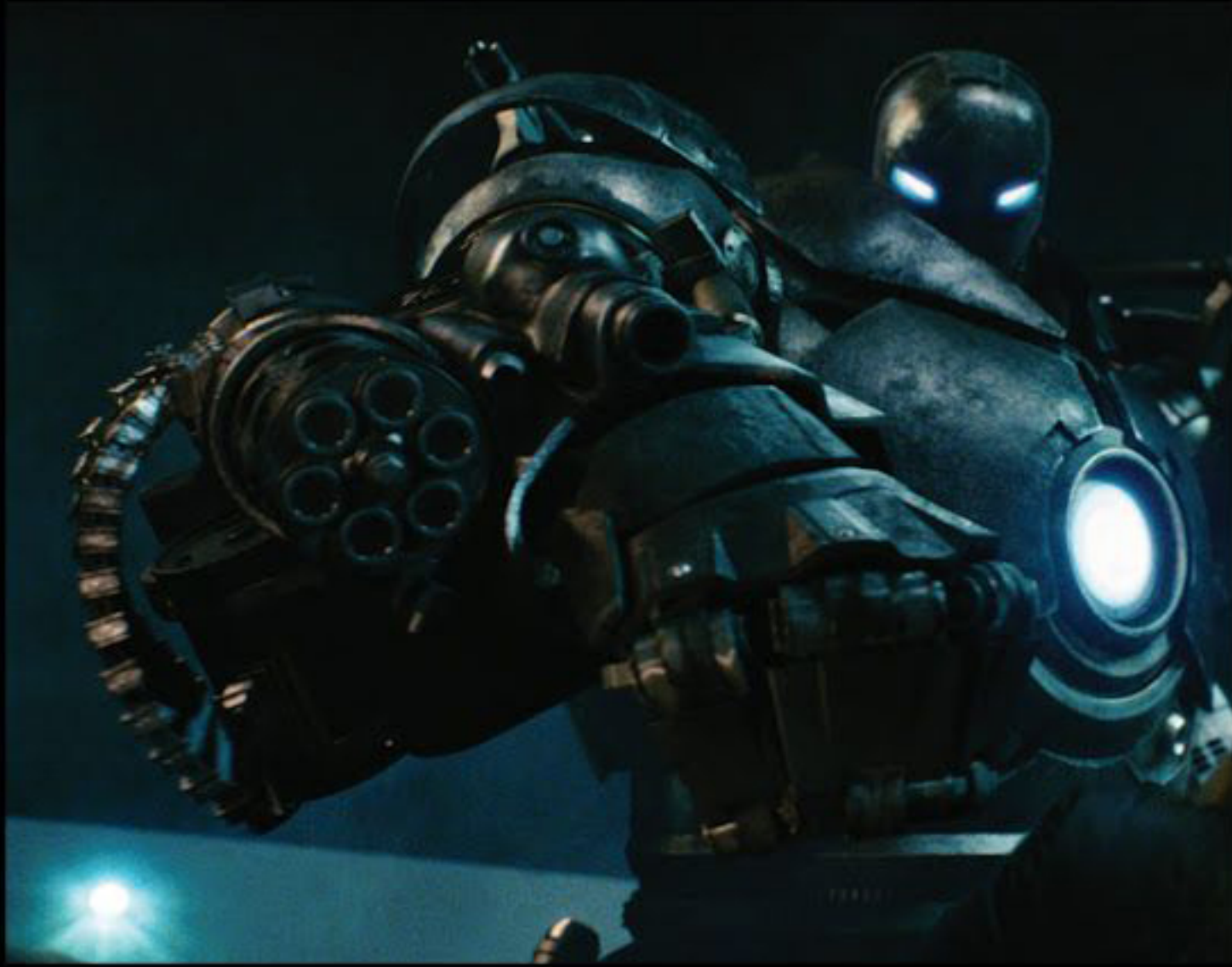
Above: Final Iron Monger maquette and bust sculpture

THE ART OF IRON MAN

Ryan Meinerding's Iron Monger hero shot (below) was meant to show off more than just the final design in its most beautiful, illustrative form.

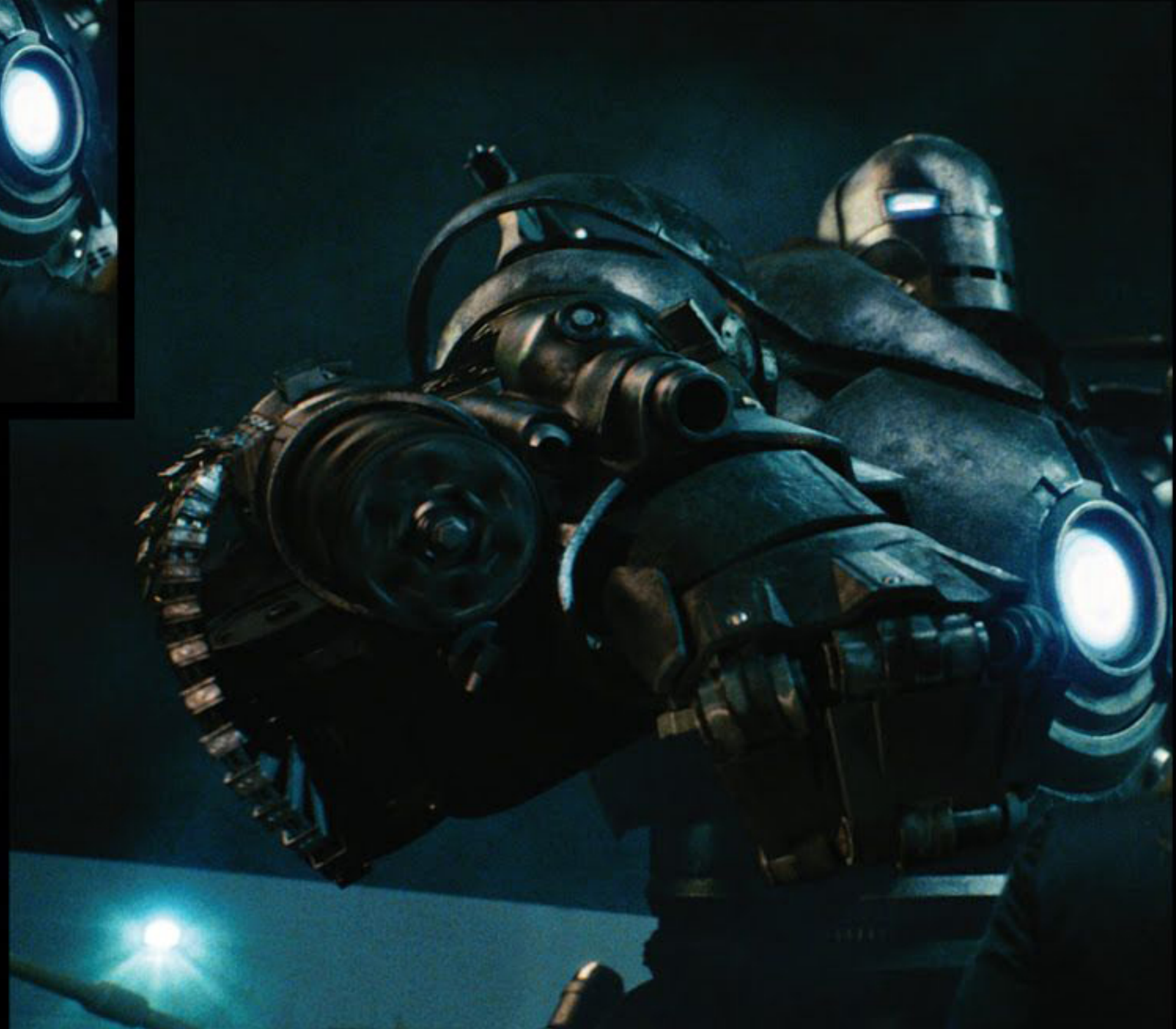
MEINERDING: "I tend to do illustrations that are geared to getting actors interested in the project. At this point, we had Iron Monger designed but we didn't know who was going to be inside of it. Throughout the design process, it was still possible it was going to be the Mandarin inside. I did this illustration to give to Jeff Bridges, the suggestion being, 'You can get away with being inside the suit, and still look heroic and cool.'"





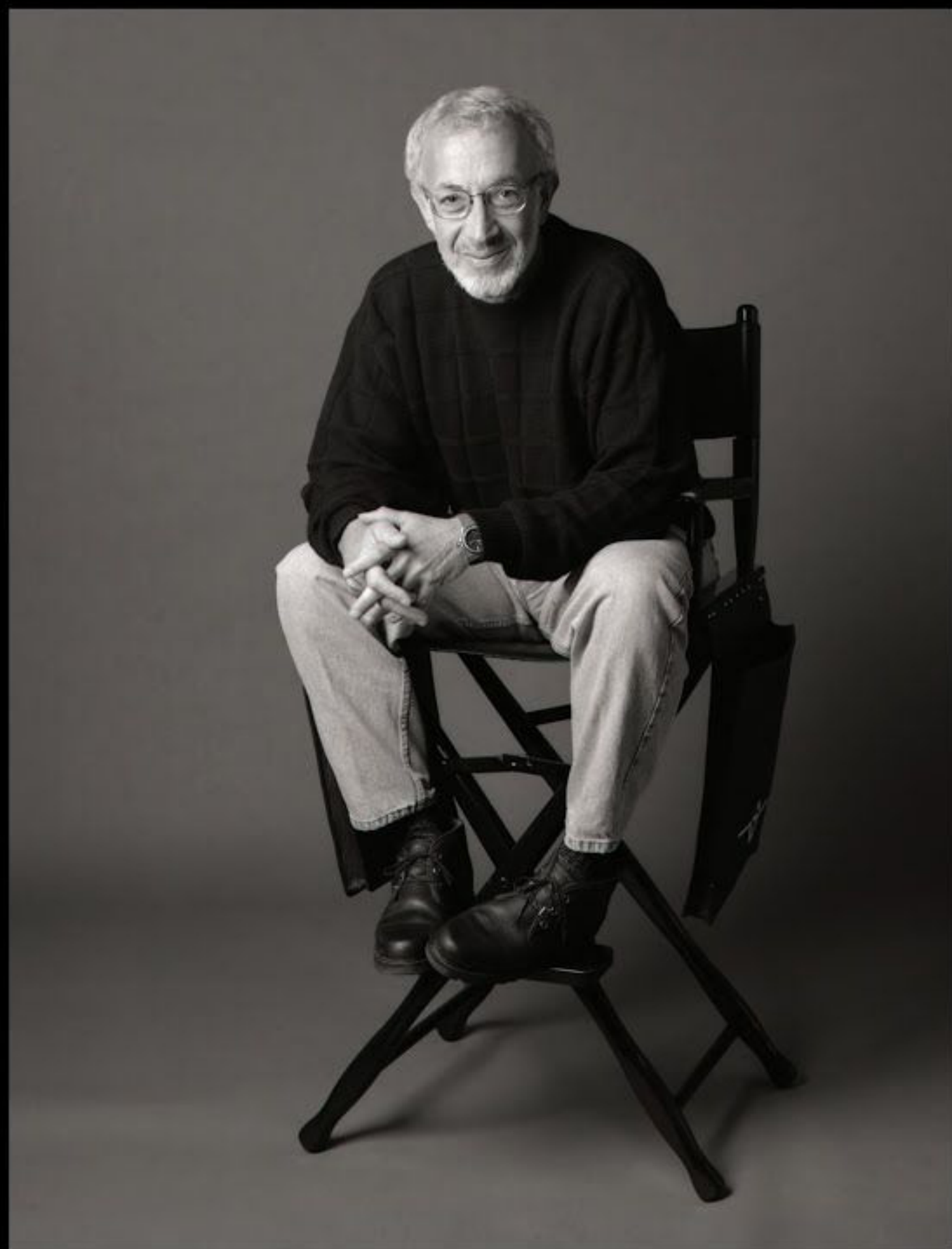
A veteran of such effects-driven films as *Tron* and *King Kong* — as well as *Starman*, a film that included effects supervision by *Iron Man*'s Stan Winston — actor Jeff Bridges was able to be an integral part of the Iron Monger suit that would give his role its ultimately nefarious characterization.

Above, right: Final Iron Monger movie stills



A TRIBUTE TO

STAN WINSTON



Stan Winston never got a chance to work on *Iron Man*. Yet without him there would have never been a series of physical suits, gigantic iron clad villains and other effects developed for the film by his studio team. It is not to say that he didn't want to work on it, he did in the worst way; he would have loved to "get his hands dirty" as he used to say, but by the time we were deep into the process of interpreting and adjusting the production designs, Stan's illness was getting the better of him. We as a studio were fortunate to have Jon Favreau want us to help him create his hero Tony Stark, as Iron Man. It was a huge opportunity to bring one of Marvel's most loved comic book heroes to life for the first time, and it was also a technical and artistic challenge. But Stan was facing a challenge of his own at the time. He would bravely come into the studio when he felt well enough and marvel at what was being created. It was something that kept his spirits up. He would look up at the ten and a half foot tall Iron Monger with the kind of awe that made us proud. It was hard to please Stan. He was a master in his own arena. Stan Winston created some of the most remarkable creatures in modern films. A vast group of talented artists graced the halls over a 25-year period. Stan himself was at the helm of this group and was responsible for many iconic

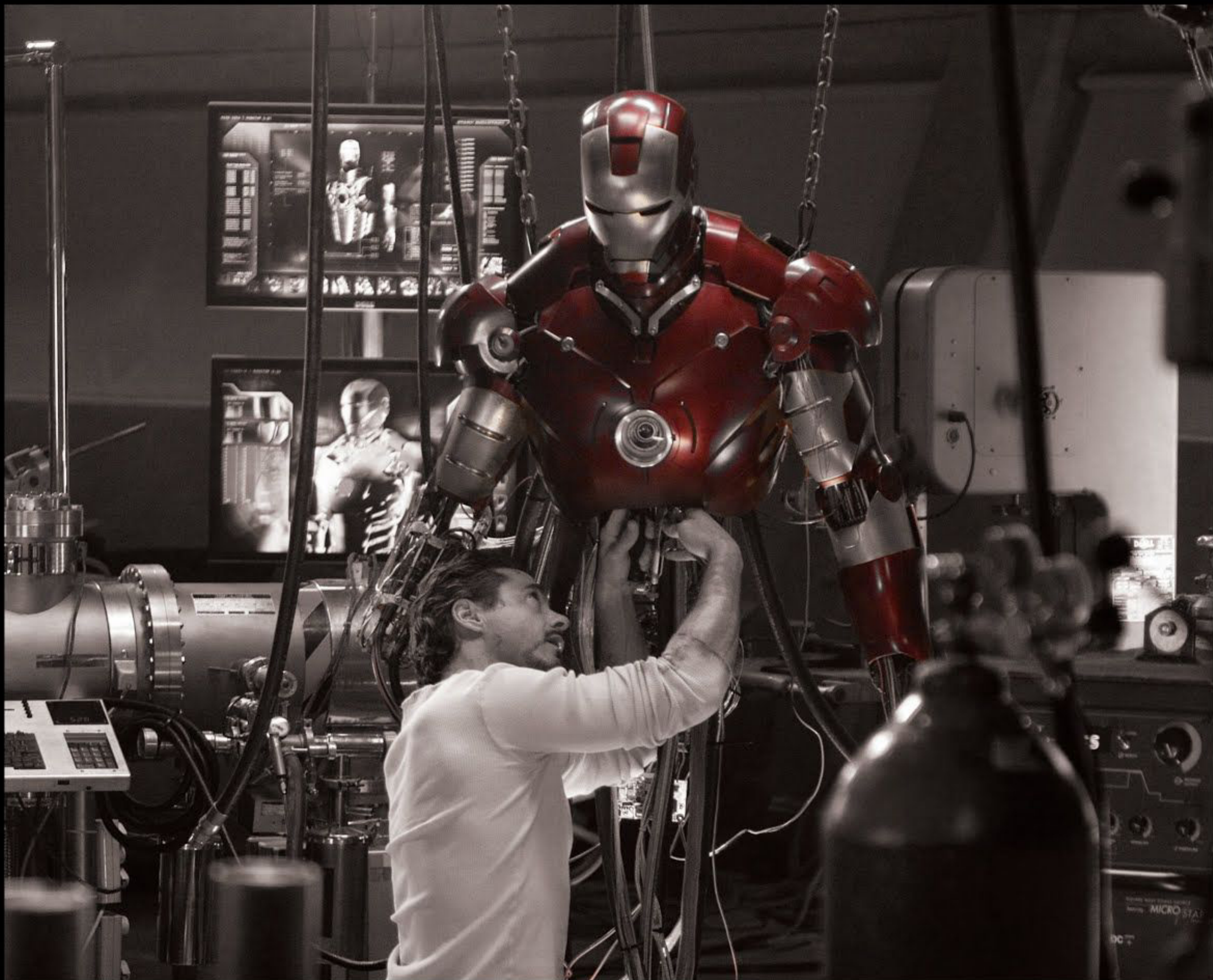


creations. Age and character makeups, Terminators, aliens, Predators and dinosaurs and so much more were his life's work.

We had all come up under his tutelage and his training and knew full well that he was a professional and deeply committed artist. He was a trained sculptor and painter and his eye very rarely betrayed him.

He also had a great sense of mechanical design. So if you were going to show him something, you had better have been ready, because he would tell you if you failed and what was still needed. That was his talent and contribution in the last years. A third eye opinion. Artists and technicians put many hours and sometimes years into the work. It becomes more than an assignment, at some point it becomes an obsession.





A quest. You start to dream about it while you sleep. You then start to live for it when you are awake. Your goal is to create something no one has yet seen in the tangible touchable world. The cinema screen is the canvas and there it will live for all time.

So when Stan came in to see the Iron Man suits, something remarkable happened. He was struck with nothing negative or constructive to say. Stopped in his tracks. Only a huge smile on his face as he slowly walked around the figures taking them in. We waited for the critique. It didn't come. Instead we heard him say, "This is the greatest thing I have ever seen you guys do." And that is saying a great deal because there was so much from the past that was remarkable.

This is a true moment in what was then known as Stan Winston Studio.

Iron Man was and is a culmination of the great and wonderful years spent with a man named Stan searching and researching for methods to help directors tell their stories in wonderful and exciting ways. Everything we learned from the master was put into the machine known as IRON MAN. That is what he taught us. That is what he gave to the movies. *Iron Man* was also the last film Stan ever saw in the theater.

Stan Winston never worked on *Iron Man*... Stan was Iron Man.

We will miss him and carry on.

—His crew



TECHNICAL SUPPORT

In the world of Marvel heroes, few approach Tony Stark's level of creative genius. Of all minds, his is the most brilliant. He did, after all, assemble the Mark I Iron Man armor in a cave from a box of scraps. To create such an astonishing invention at gunpoint further illustrates his incredible resourcefulness.

But even Tony can't do it alone. While the rest of us can only fantasize about taking care of routine tasks with duplicates of ourselves, or having our needs tended to and lives made easier by robot helpers, Tony has actually been able to create such wonders.

This chapter highlights a few of the wonders brought to life by the innovative Tony Stark. First and foremost, meet Jarvis, a virtual-reality butler that has the run of the blindingly opulent Stark Estate. If Pepper Potts is Tony's right-hand gal, Jarvis holds court as his wryly enthusiastic sidekick. With an omnipresent voice hovering over the action inside Tony's domain, this cutting-edge, artificially intelligent computer has tenure as lab assistant, tech support and — sadly — confidant to a genius too often trapped inside the contemplative isolation of his own mind.

And Tony's army of robotic helpers, in the form of Dummy and You — a pair of smart machines designed by the wunderkind teen while he was an undergraduate at MIT — represent early incarnations of Tony's Jarvis tech. Abidingly loyal, Dummy and You have served their oftentimes irascible boss through tasks as simple as handing him a screwdriver or as critical as saving his life with a timely assist — not to mention always anticipating the need to put out a fire in the Workshop.

Tony's tech support needs are further met by the ultra-advanced Heads Up Display (HUD) that allows him to interface with his armor. Controlled in tandem with Jarvis, the HUD helps Tony calculate flight paths, control his repulsor technology and perform humble tasks like evading missiles fired by fighter jets.

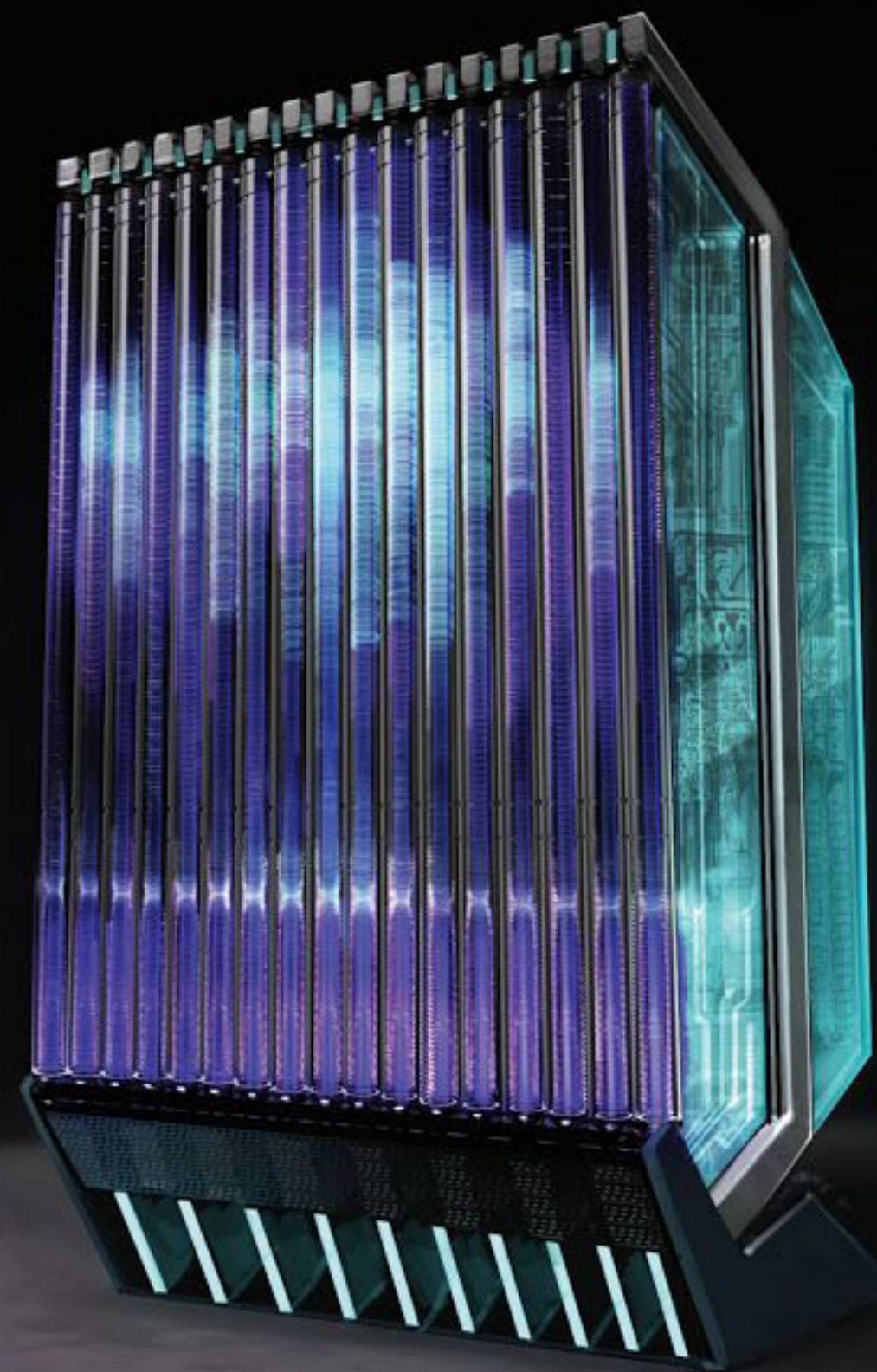
These kinds of details were crucial for *Iron Man* designers to get right. Their mission was to bring life to these artificial constructs — and in so doing, enable the seamless storytelling for which *Iron Man* has come to be lauded.





One of the earliest supporting characters in the Iron Man comic book was Edwin Jarvis, Tony Stark's loyal butler. Aiding Director Jon Favreau's desire to bring Jarvis into the 21st century, Meinerding set out to adapt him as a ubiquitous A.I. construct. Robert Downey, Jr.'s fascination with the mystical quality of pentagonal shapes led him to request their addition to the Jarvis keypad design (above).

The Jarvis console (center, right) was to be Jarvis' physical heart. One of the main design paradigms for the illustrator was to make it look like it could, in Meinerding's words, "break interestingly" — i.e., have a dense, glassy configuration that would look spectacular on film as potential collateral damage in an on-screen battle.



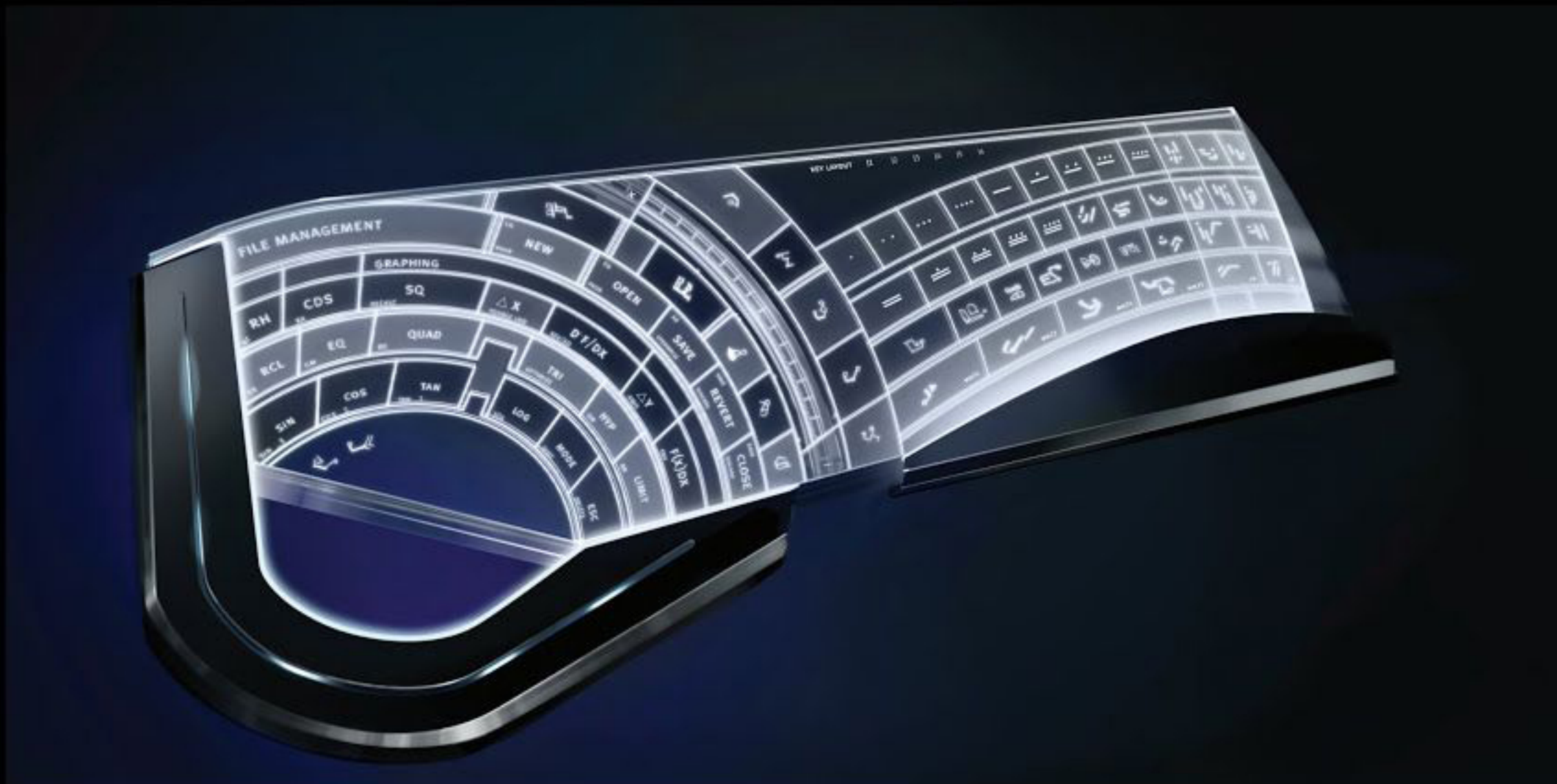


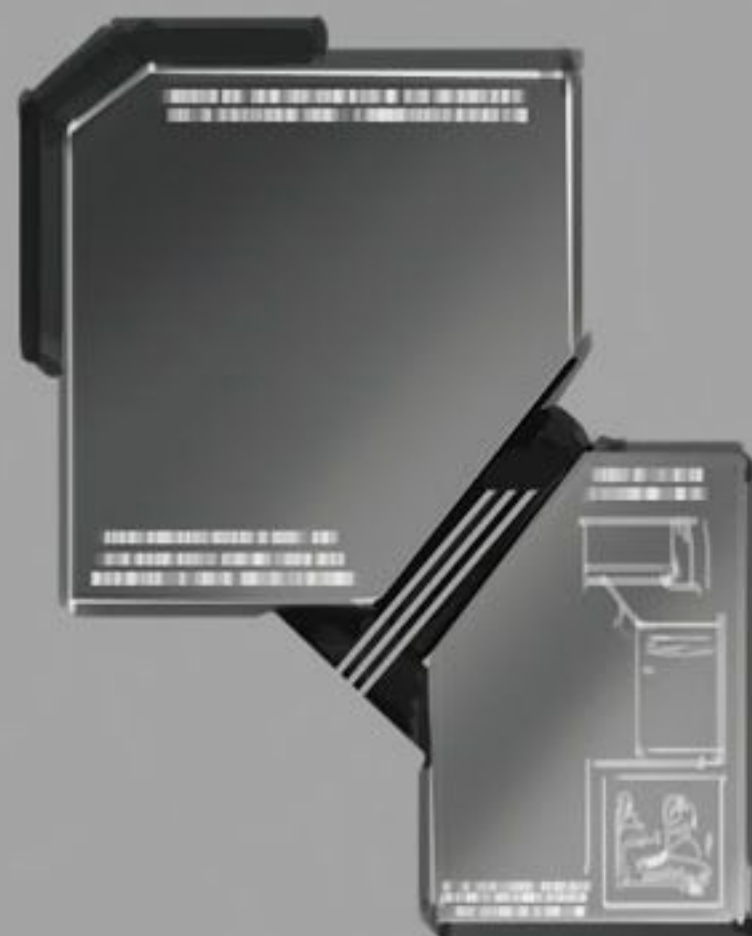
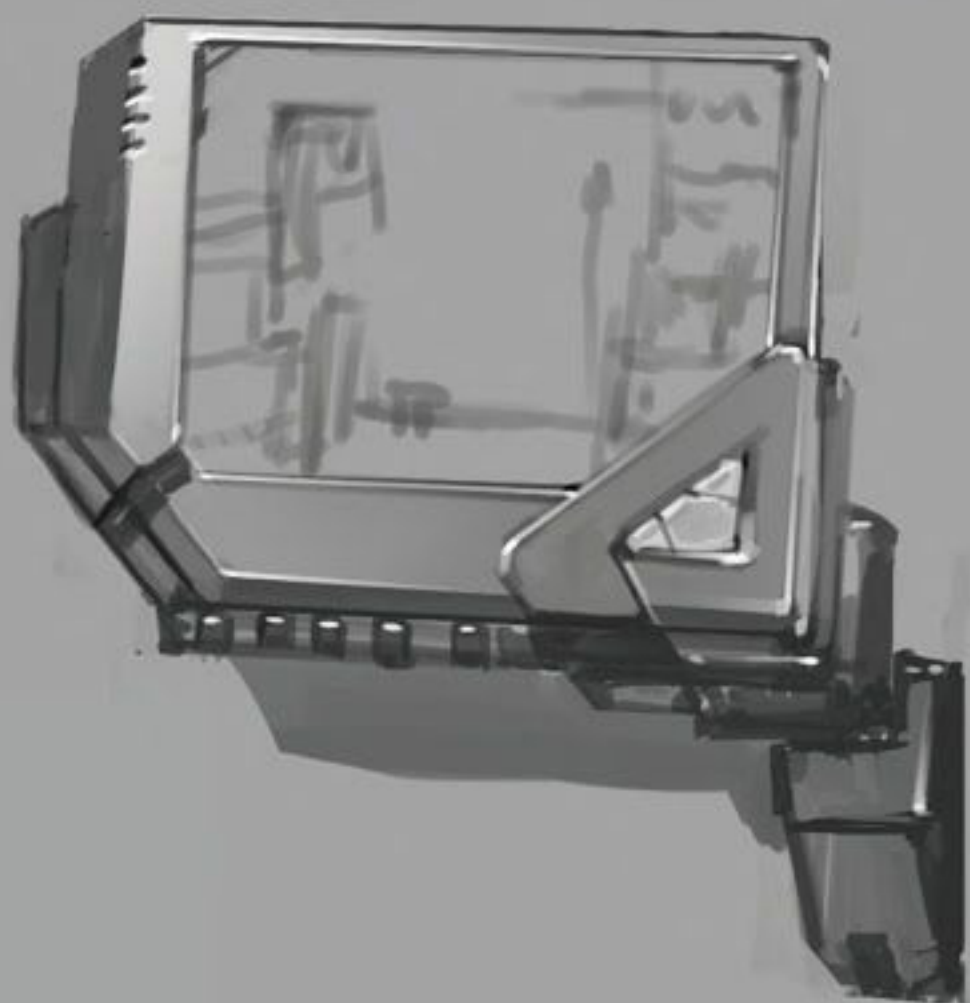
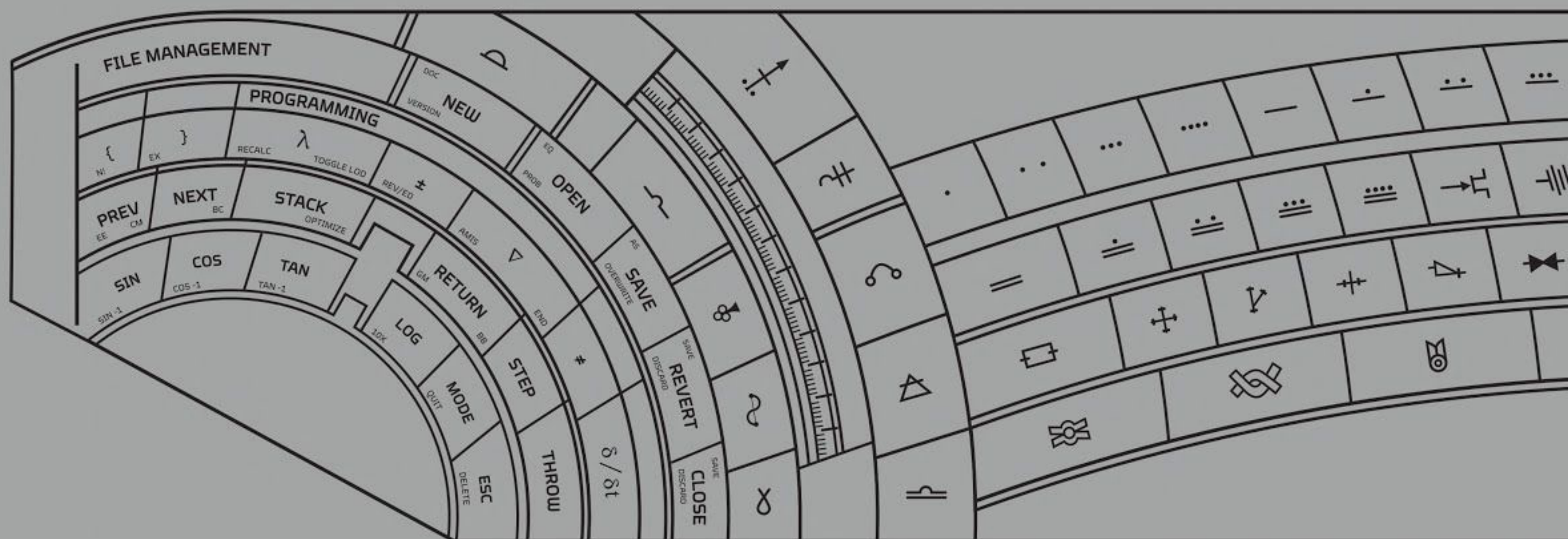


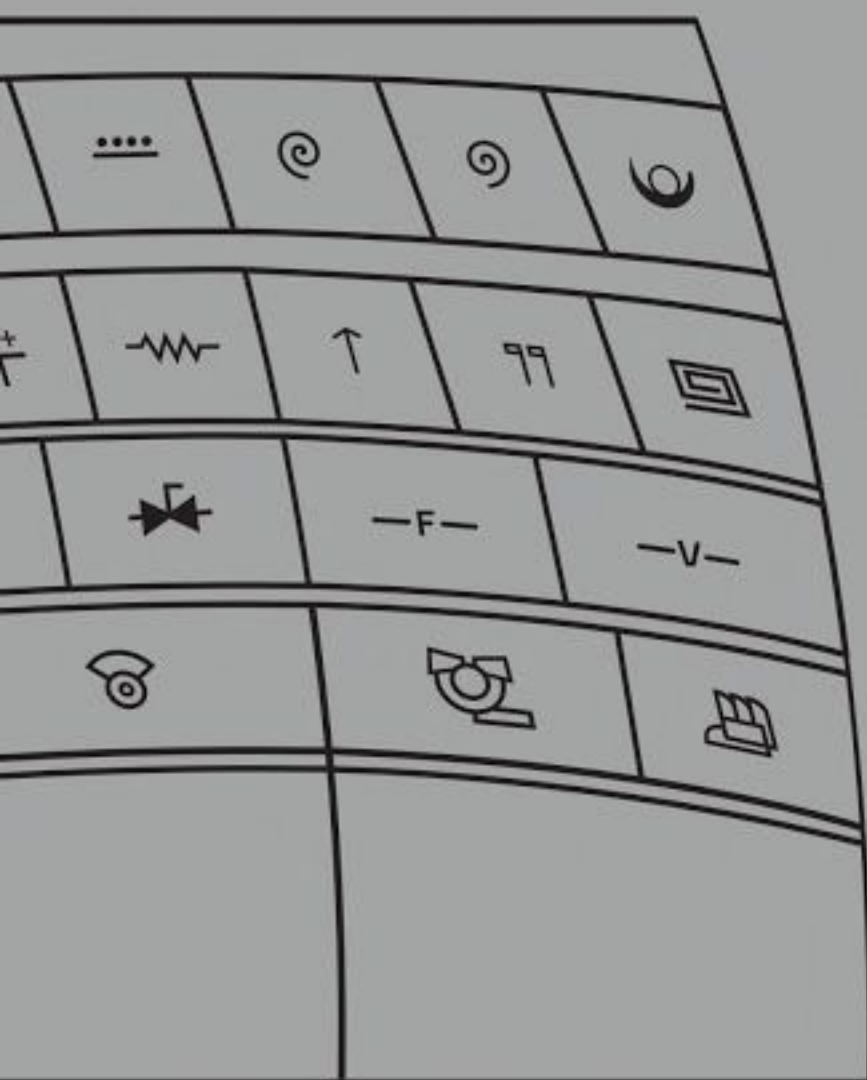
Ryan Meinerding's early Jarvis keypad designs (left, below) would give its users — whether it be Pepper Potts or a visiting reporter on a sleepover — an interface to Jarvis. It also had the benefit of giving the film's audience a chance to relate to the A.I.'s otherwise ephemeral presence.



Jarvis' holographic keyboard designs (right, below) were replete with exotic symbols and undefined characters. Meinerding adapted keyboard characters from sources as diverse as Mayan mythology and electrical engineering figures, and also made some up out of whole cloth. The net result of such subtleties reinforces that the mind of Tony Stark is so advanced that he and Jarvis are essentially speaking to each other in a language uniquely their own.







Another early stab at Jarvis possibilities included a sliding door concept (left), in which a physical representation of Jarvis would telescope outward from a hidden seam in a wall.

Page 84: More Jarvis keyboard and keypad designs (Ryan Meinerding)

Below: Another Jarvis console design (Ryan Meinerding)





Above, right: HUD display concepts (Kent Seki/The Orphanage)

Through his armor's Heads Up Display (HUD), Iron Man was able to interface with Jarvis and see outside the suit through radar, telemetry, and diagnostic readouts. The dynamic visuals of the HUD also allowed filmgoers a chance to climb inside the suit with Tony and share his super-hero experience. Visual Effects Supervisor JOHN NELSON headed up the development of the HUD, amalgamating the contributions of *Iron Man's* legion of designers, composers and pre-vis supervisors. One of those pre-vis supervisors, KENT SEKI, took a lead role in evolving Nelson's HUD concepts from its first to final stages.



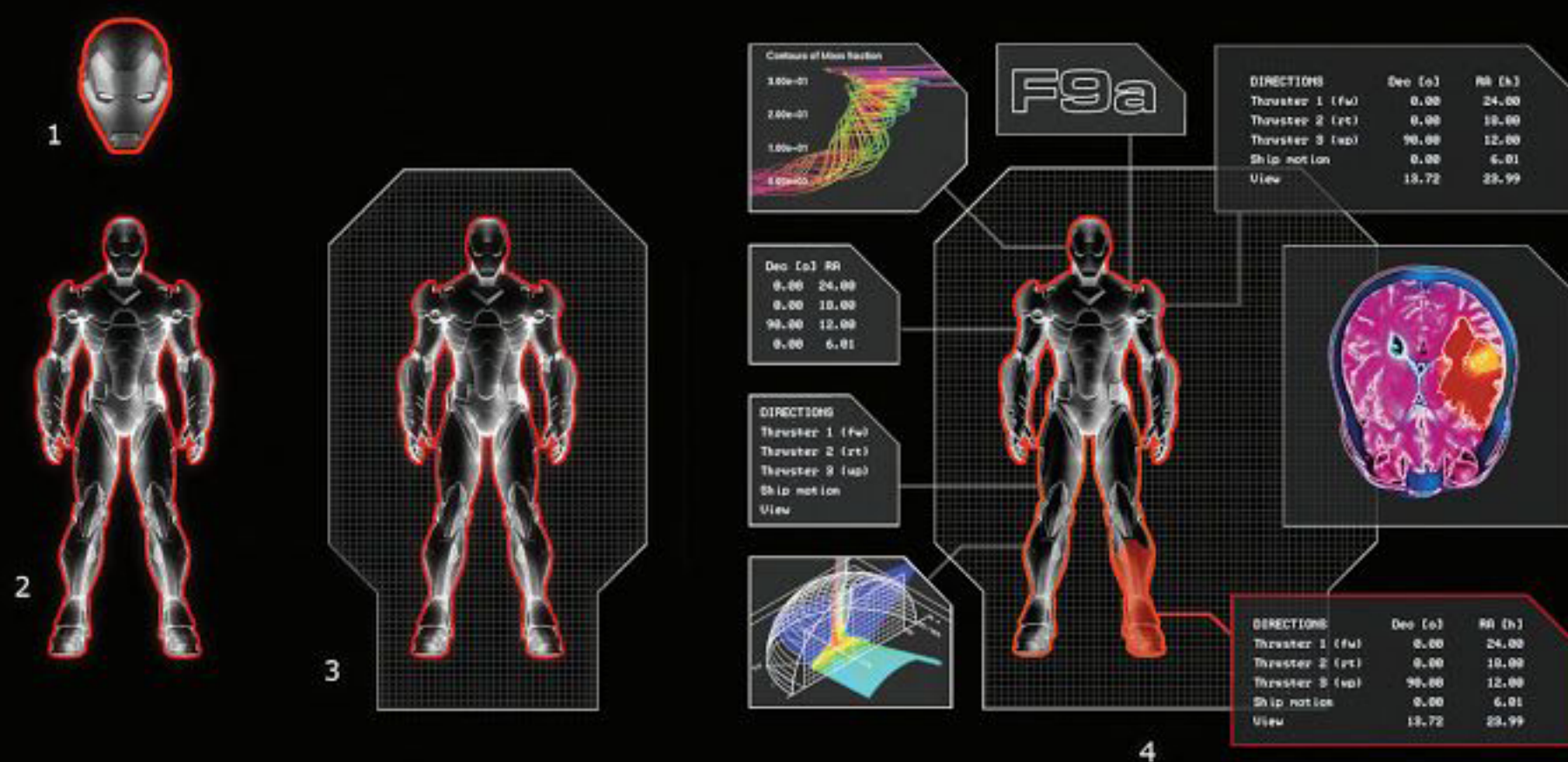
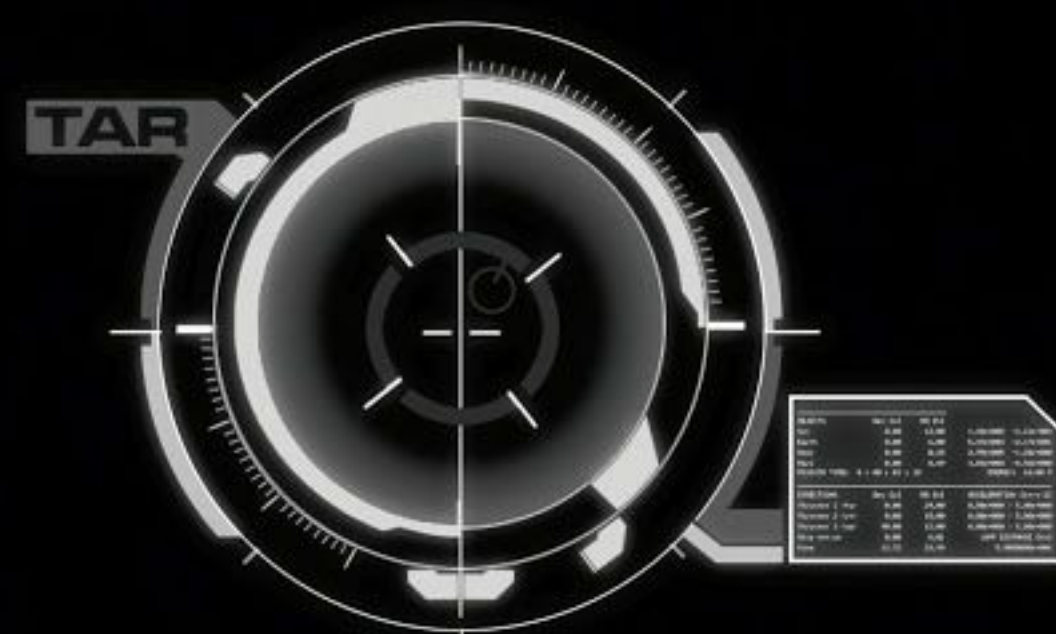
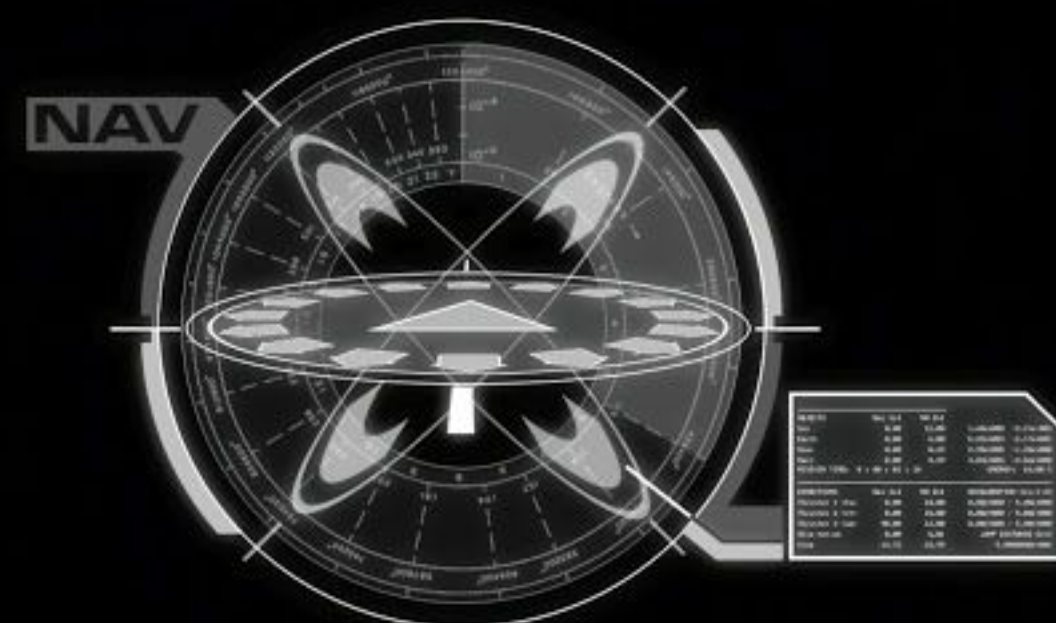


Above, right: HUD display concepts (Kent Seki/The Orphanage)

SEKI: "Conceptually, the HUD represents one of the more difficult visual effects of the film, since this view of Tony inside the mask came from an 'impossible' camera, meaning that you could never place an actual film camera to capture this particular view. We were asking the audience to accept a shot designed outside of the conventional film making language while at the same time using the time-tested film technique of the extended close-up. Director Jon Favreau took a substantial risk in pushing to include these shots in the film."



THE ART OF IRON MAN



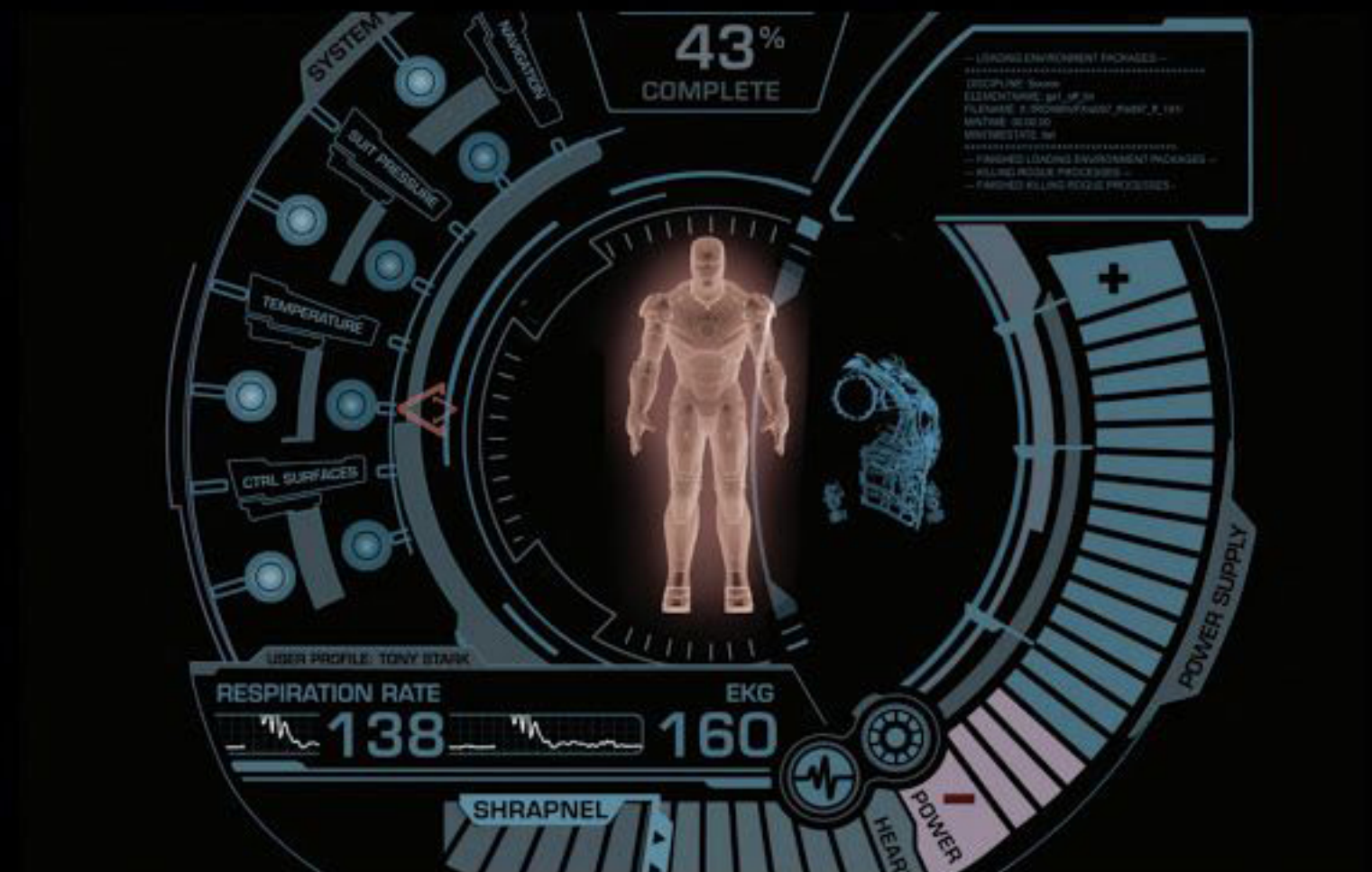
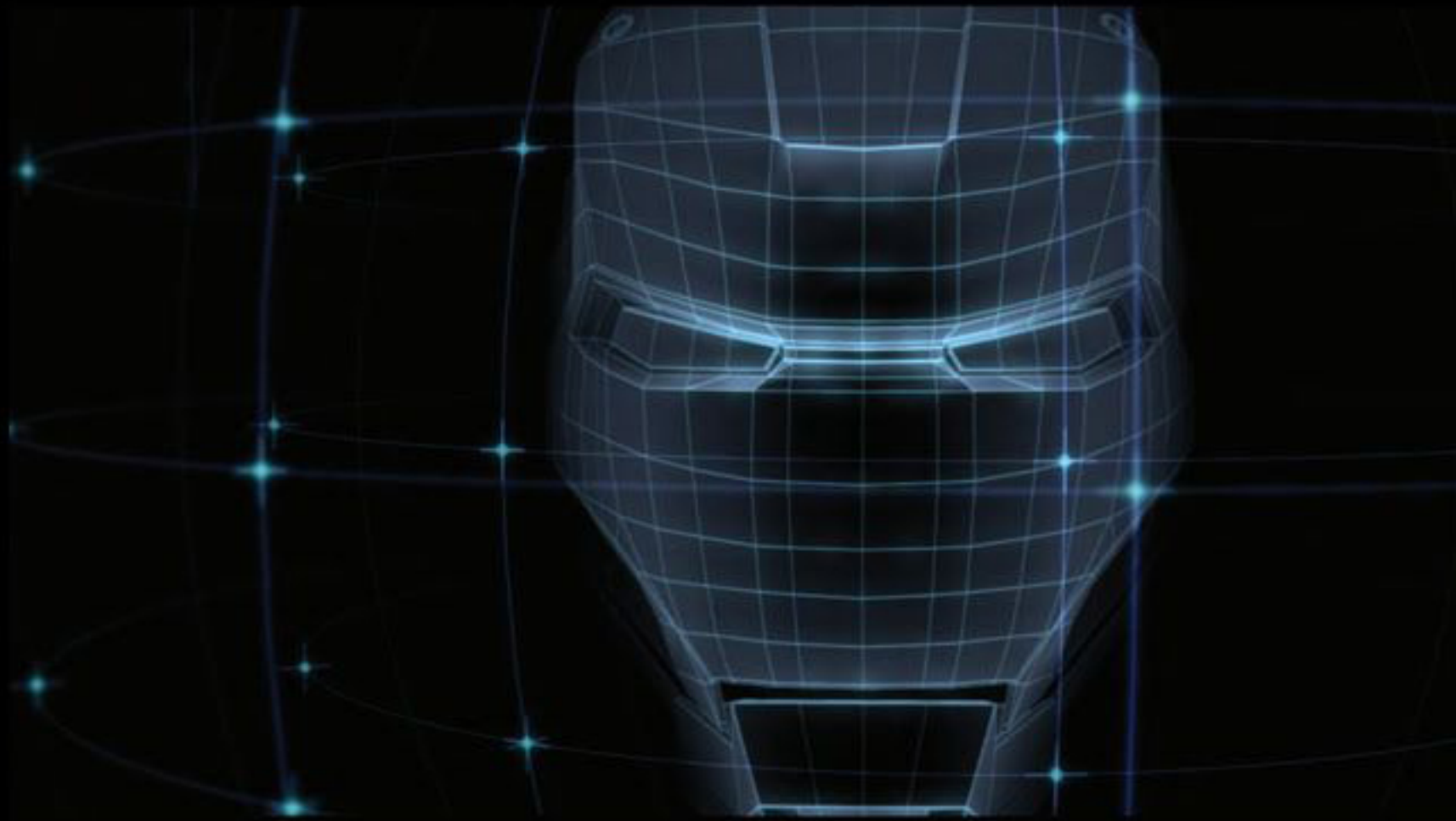
Nelson and Seki worked with VFX vendor The Orphanage to conceptualize various “widget” designs (above, right) — visual indicators displayed by the HUD that informed Stark of the functioning of his suit. At this stage in the film’s development, designers found it necessary to develop a vocabulary to express the HUD and created multiple widgets to speak the new language. As production ensued, the language would become streamlined, compact and efficient.





Creating sympathy between the outward POV and the view of the HUD underneath was foremost in the minds of designers. The Orphanage, in tandem with Seki and Nelson, crafted visual displays (above, right) that maintained consistency of both forward and backward views, as well as views from inside the suit and out.





The Omega Widget (above right) is a distillation of all the widgets into a single, "super" widget. To Seki, it also represents one of the central themes of *Iron Man*: progression.

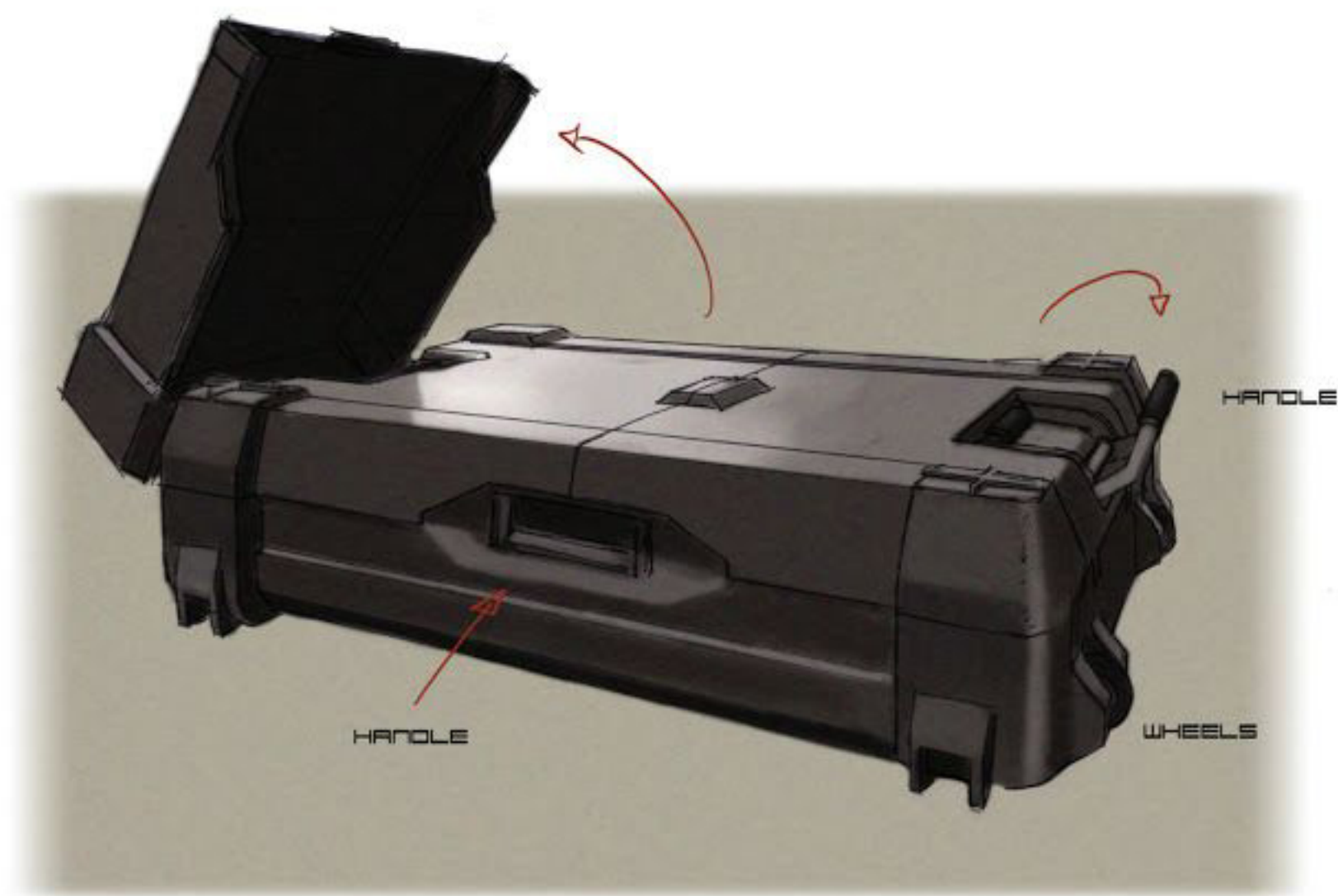
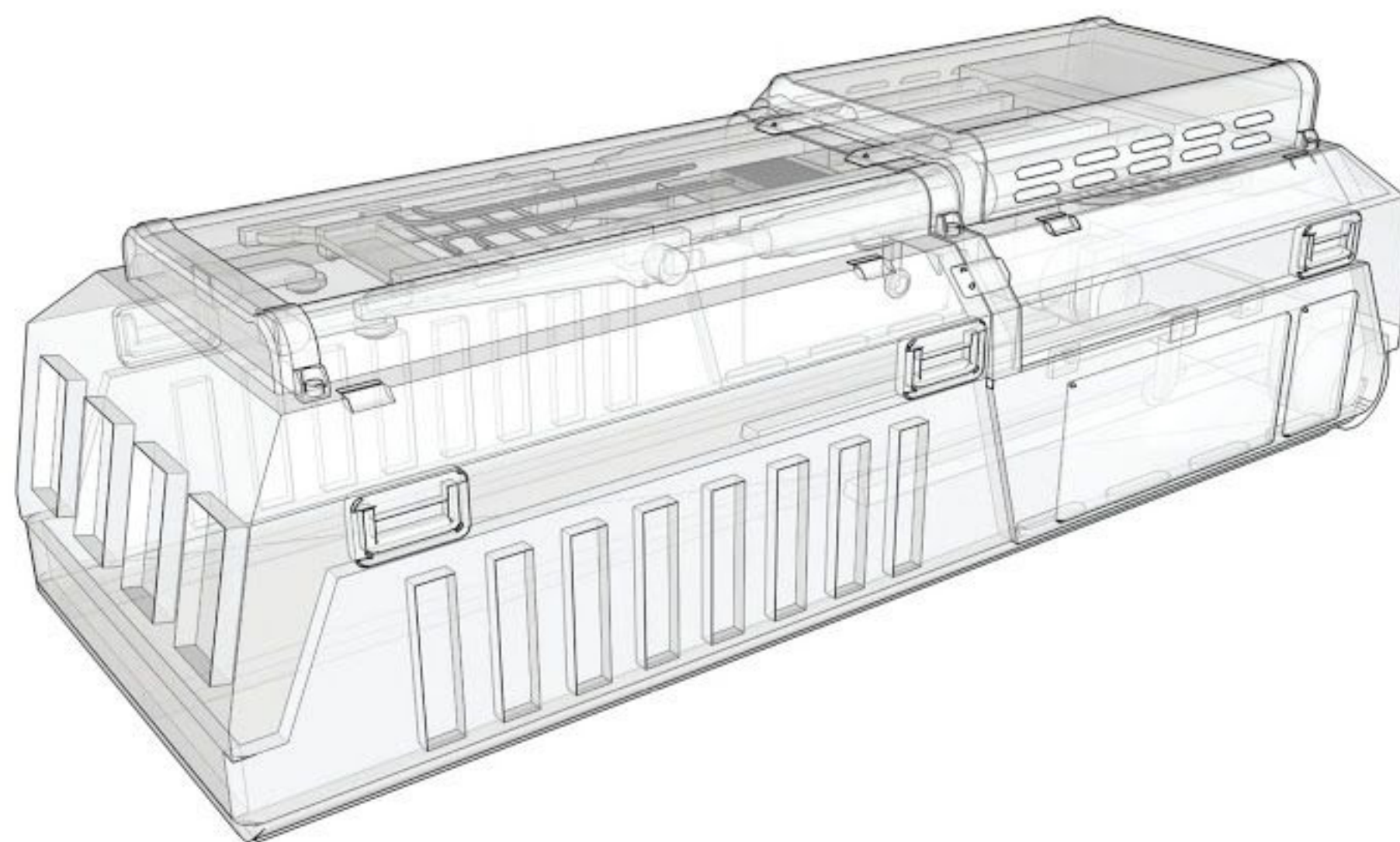
SEKI: "Tony is constantly tinkering with and modifying his technology. His HUD should reflect this aspect of his personality."

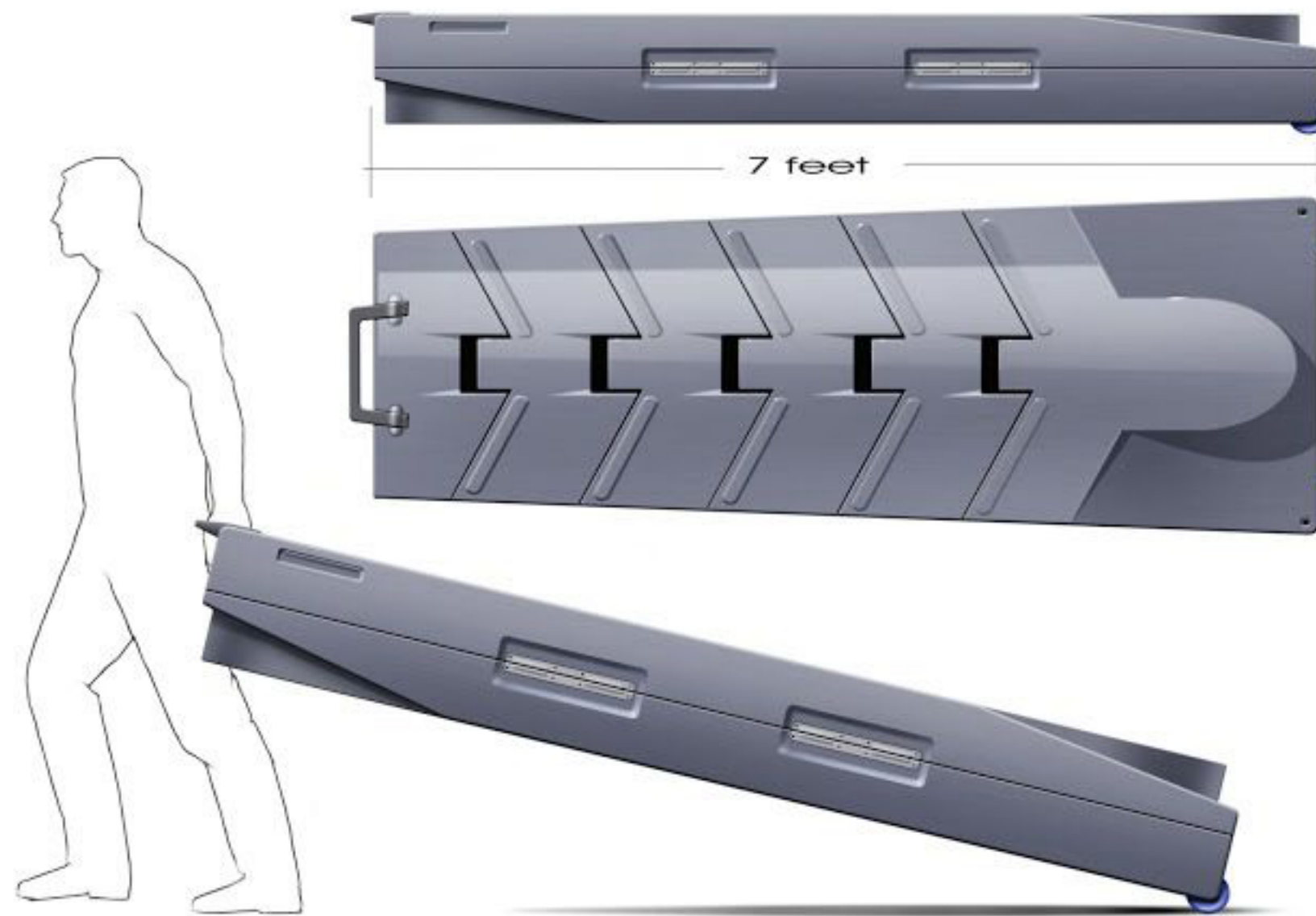
Right, and page 91: Final HUD designs and displays

Above left: Early HUD visual development (Kent Seki)









Page 92: Armor suitcase designs (Ron Mendell)

Page 93: Armor suitcase designs (Harald Belker)

One of the original conceits of the Iron Man comic book was that Tony Stark would carry around his armor in small segments stored in a suitcase, the better to protect his identity while still having the armored power of Iron Man at his fingertips. It also helped solve the problem of placing Iron Man in far-flung locales where the hero might have difficulty flying under the power of his repulsor technology. Phil Saunders ushered this idea into the creative process of the movie. Though he didn't work directly on it, he monitored the progress of the suitcase all the way through, even though it didn't wind up coming to fruition. Unlike the early simplicity of the comic-book suitcase, this 21st-century armor attaché would have to be some heavy duty equipment in both form and function!

SAUNDERS: "We came up with an idea of having a suitcase that was almost like an ammo case or a steamer trunk that would open itself up hydraulically. It would open up with these bars above Tony's head. He would grab onto the bars, lift himself up, lower himself into the pants, and then they'd seal up on him. Now he'd be standing in the pants, he'd reach up into the torso section that would be hanging above him, and then that would seal down over him like a watch band. Then he would put on each of the arms that would attach over the shoulders, and then the ribcage section would clamshell over him, and then finally he'd put on the helmet and gloves and be done."



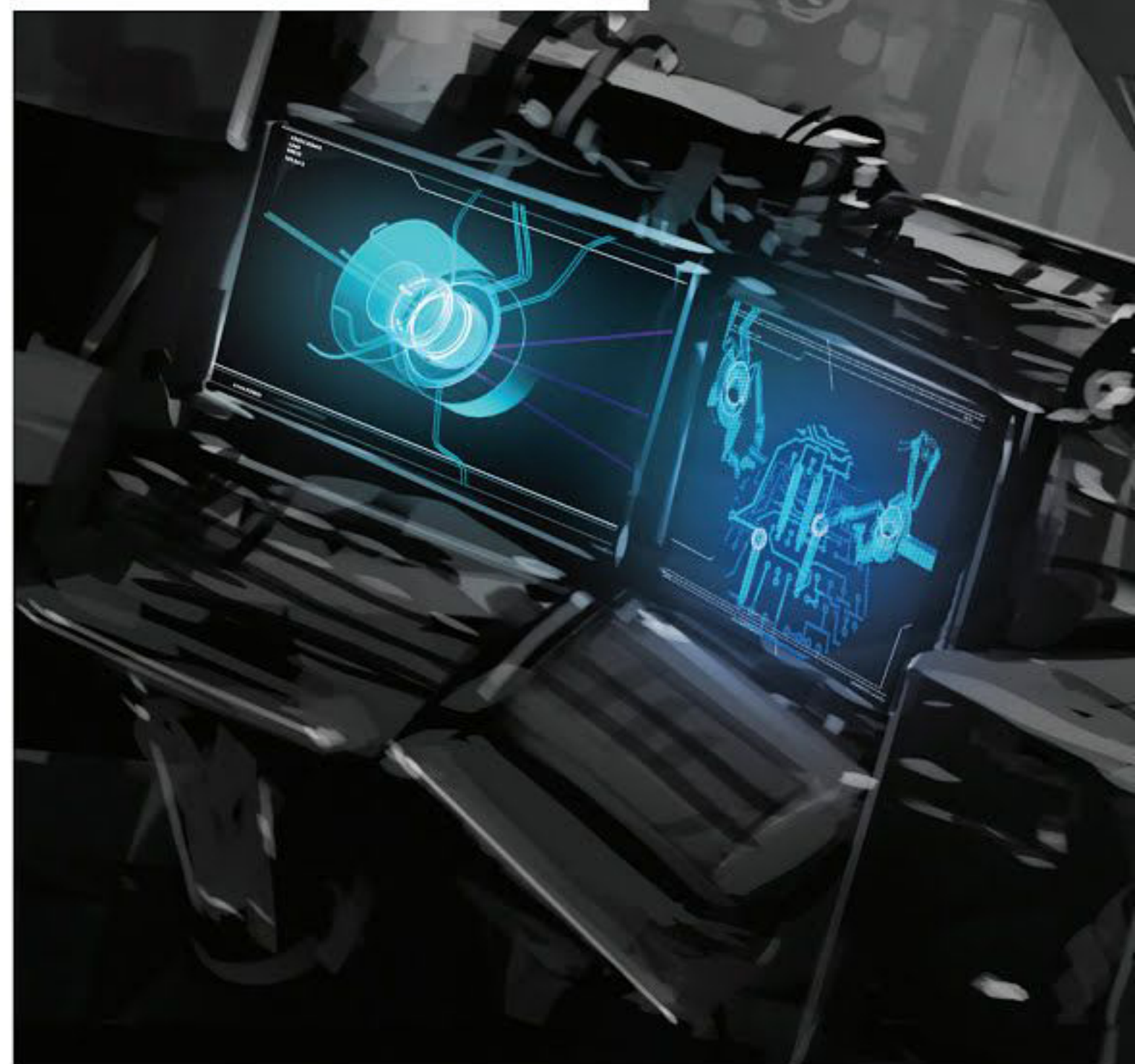


Above: 3D design art (Chris Ross)

Right: Keyframe art (Ryan Meinerding)

The Micro-Robotic Assembly System was an early idea from Jon Favreau. The elaborate machine would establish Stark — after returning wounded and weary from his torture in Afghanistan — as able to maintain the RT's function with the aid of self-controlled, highly sensitive, robotic equipment; in effect, he would be able to perform microsurgery upon himself. Meinerding devised the translucent computer screen above Stark to give him a visual aid of the tense game of "Operation" he was playing with the life-giving RT unit set in his chest cavity. Further, with his arms resting inside the Assembly System's controls, Stark would be able to translate the subtlest movements of his hands and fingers to a microsurgical scale by the giant, hydraulic arms of the robot.

In the end, this most sci-fi of sequences was abandoned and given over to the more human scene in which Stark's loyal aide Pepper Potts assisted in the replacement of the RT. Nonetheless, the Micro-Robotic Assembly System was a fruitful inspiration for other elements of the art of *Iron Man*.

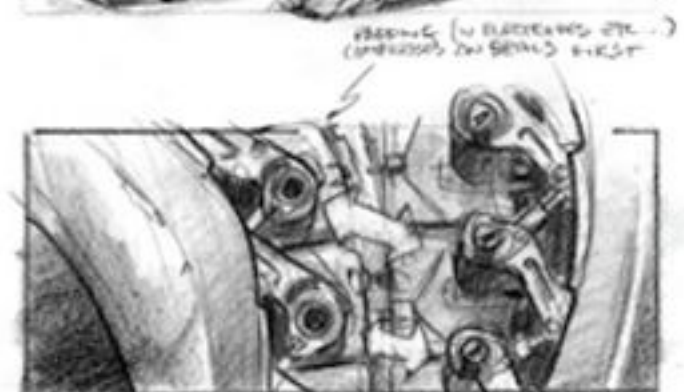
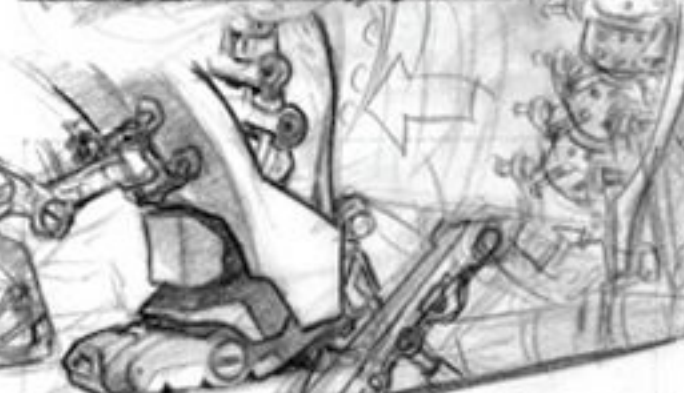
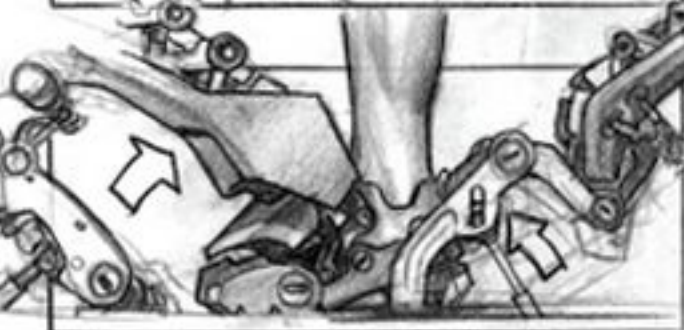
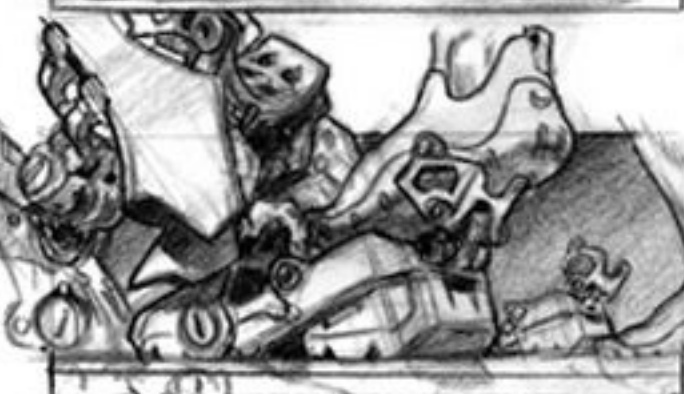
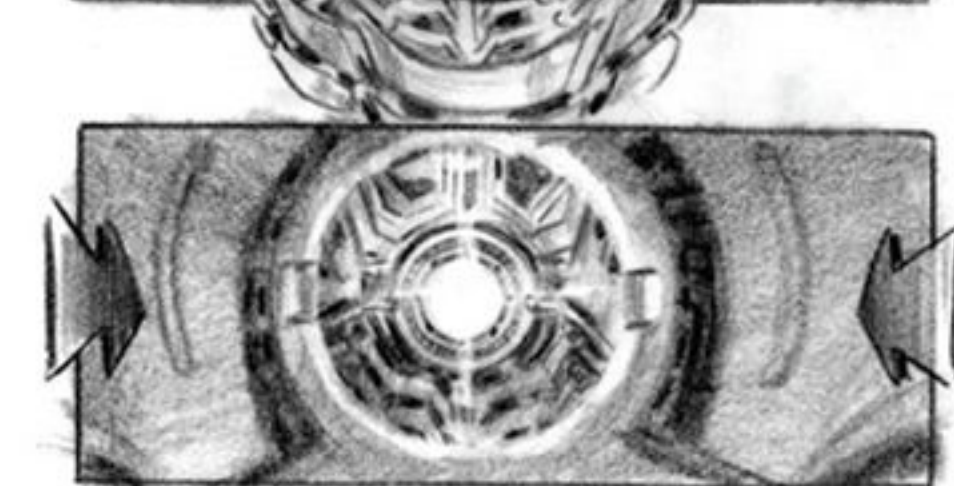
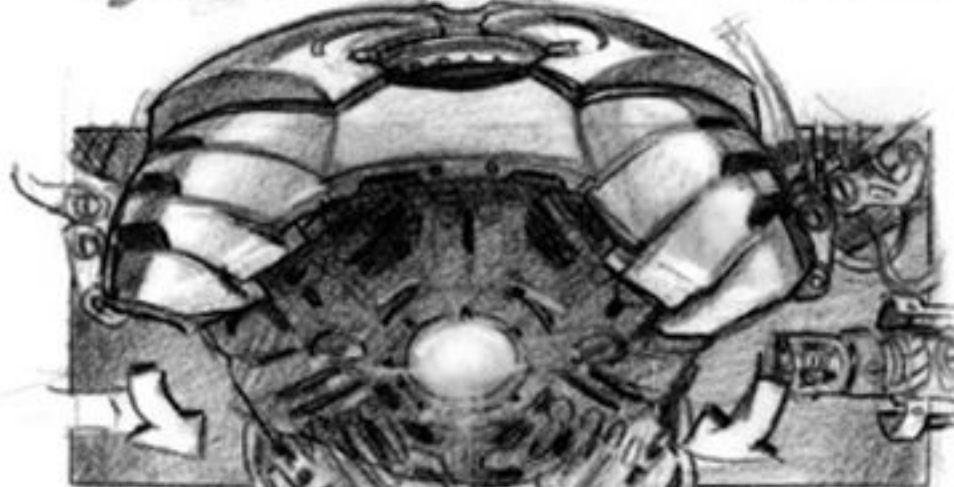
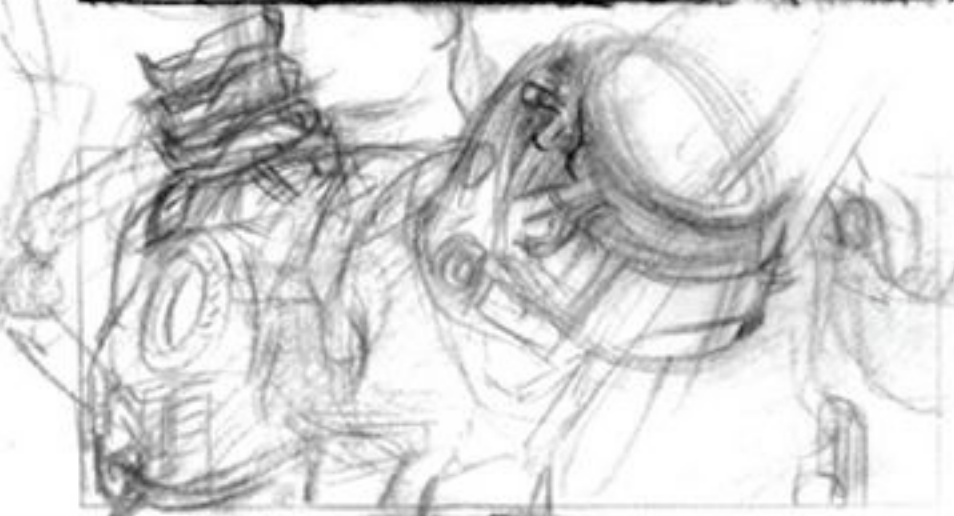


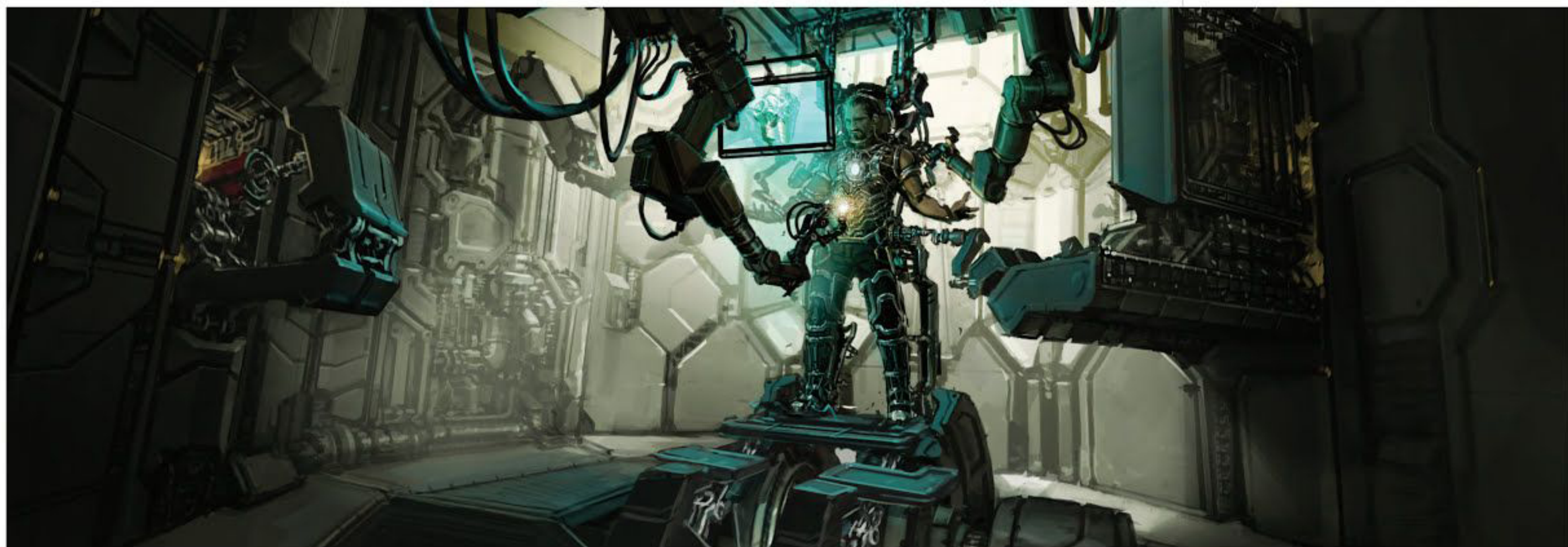
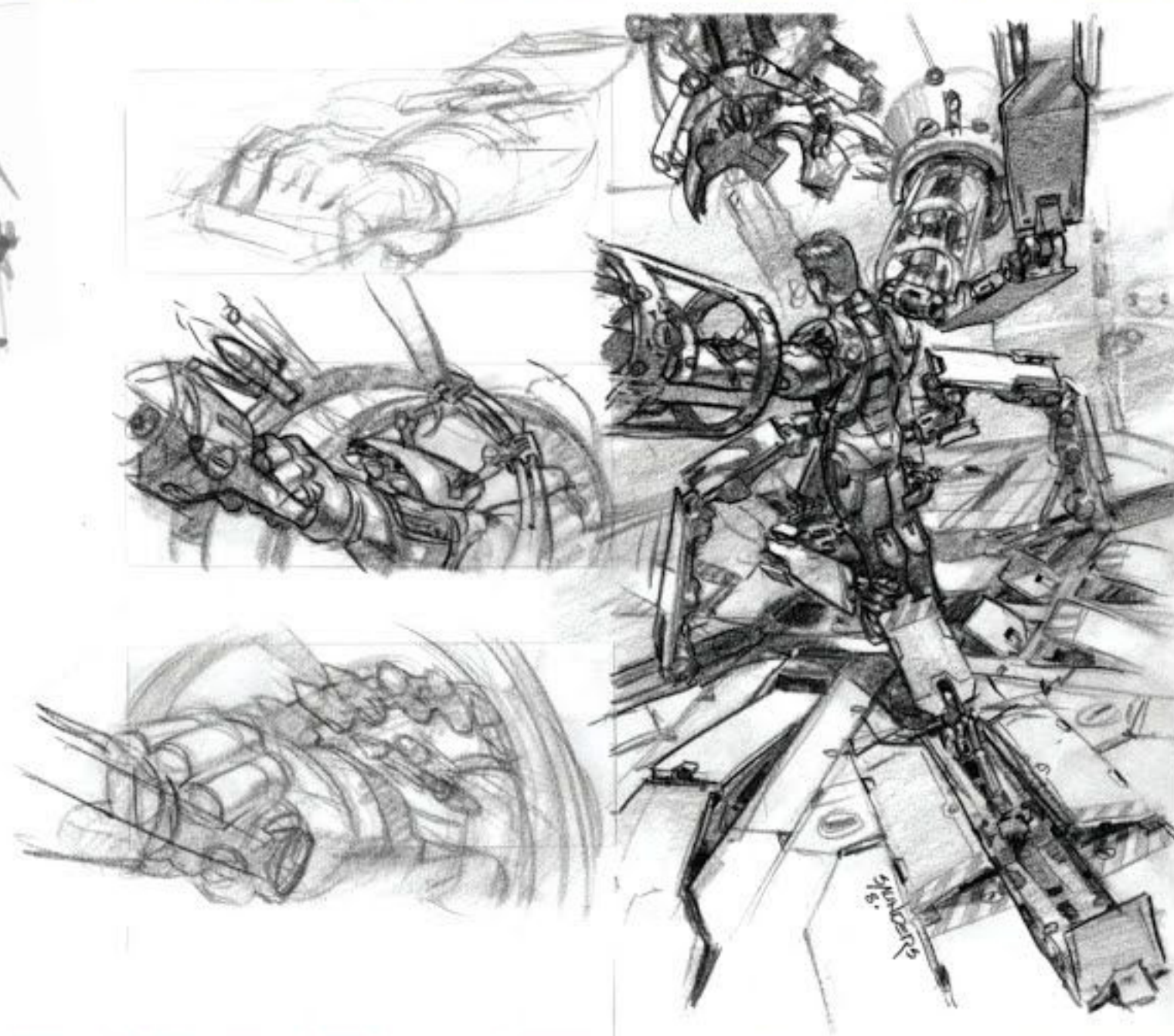


One of the more intriguing aspects of Iron Man's design revolved around the question of how Tony Stark would manage donning his armor. In other words, how is Iron Man going to "suit up?" The Micro-Robotic Assembly System, though unused in the film, reminded designers of the effectiveness of the army of robots at Stark's disposal. When the suit up sequence was being developed in post-production, concept artist Phil Saunders was asked to deliver some pre-visual art to help conceive the scene. He went to town on a series of thumbnail storyboards (right, page 96-97) that walked the sequence through memorable storytelling beats. One post-production challenge for this scene was not having an actor to work with.

SAUNDERS: "The big mandate here was to try and do as much as possible without actually having to have the actor involved. Robert Downey, Jr. had moved on to another film and to bring him back was going to be very difficult. A lot of this sequence was based on creating shots that hid his face so we could use a stunt double, or working in a lot of detailed insert shots to focus on smaller events. Our goal was to have this be a fast-paced and well-choreographed shot. Give it a sense of overlapping motion, with one part of the robotic system retracting, another coming in, no deadspace, everything happening just in time. Everything had to have this immaculate sense of precision."

Page 97, bottom: Suit up gantry keyframe art (Ryan Meinerding)







This series of keyframe roughs (above) show Ryan Meinerding offering up several different angles for the inevitable hero shot showcasing Stark using his Suit Up Gantry. One of the story elements of which he and Saunders were mindful was establishing the holistic nature of the suit up process.

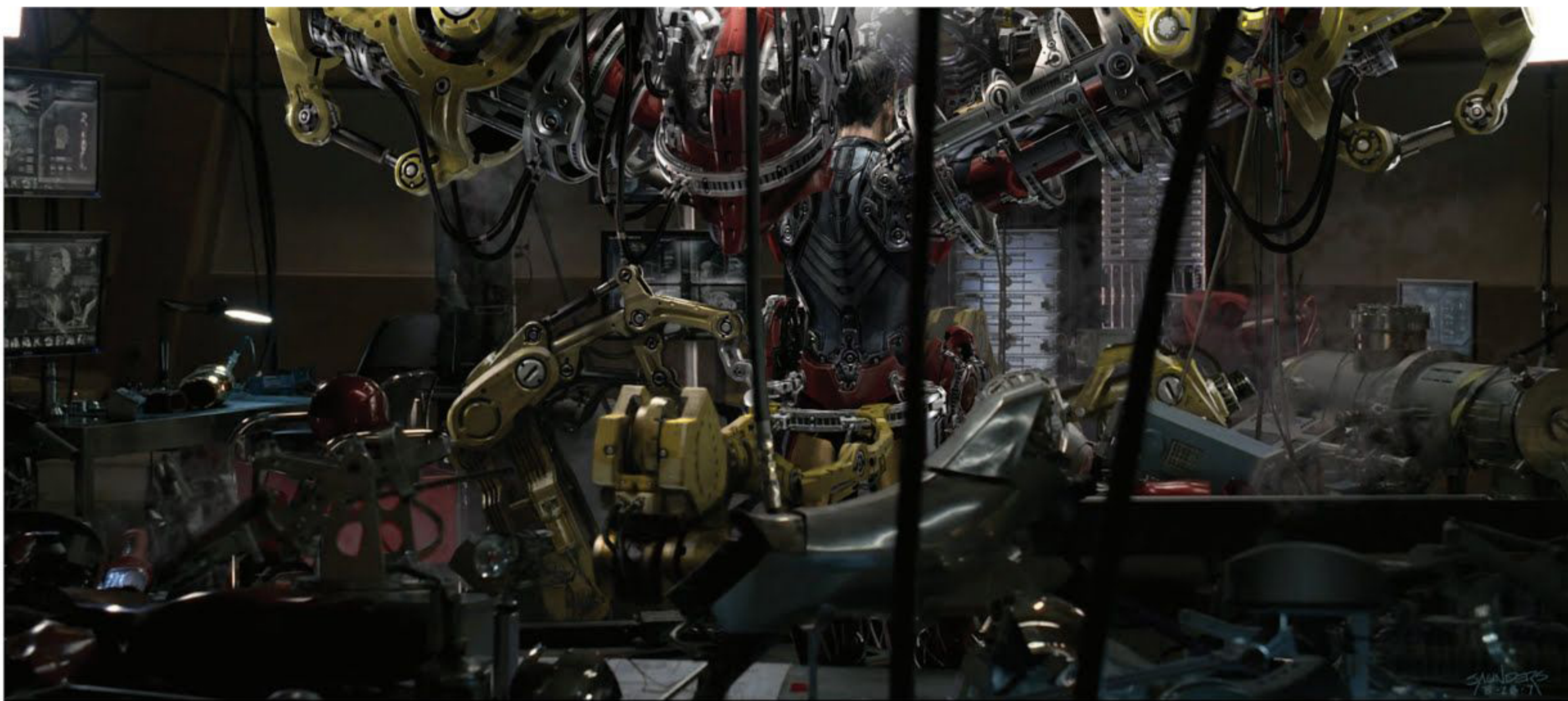
MEINERDING: "We wanted to show off the stages of the armor suit up: first, the padding against the skin, next the circuitry over that, and then the multiple layers of armor. Breaking it down like that gave it a structure that made sense."

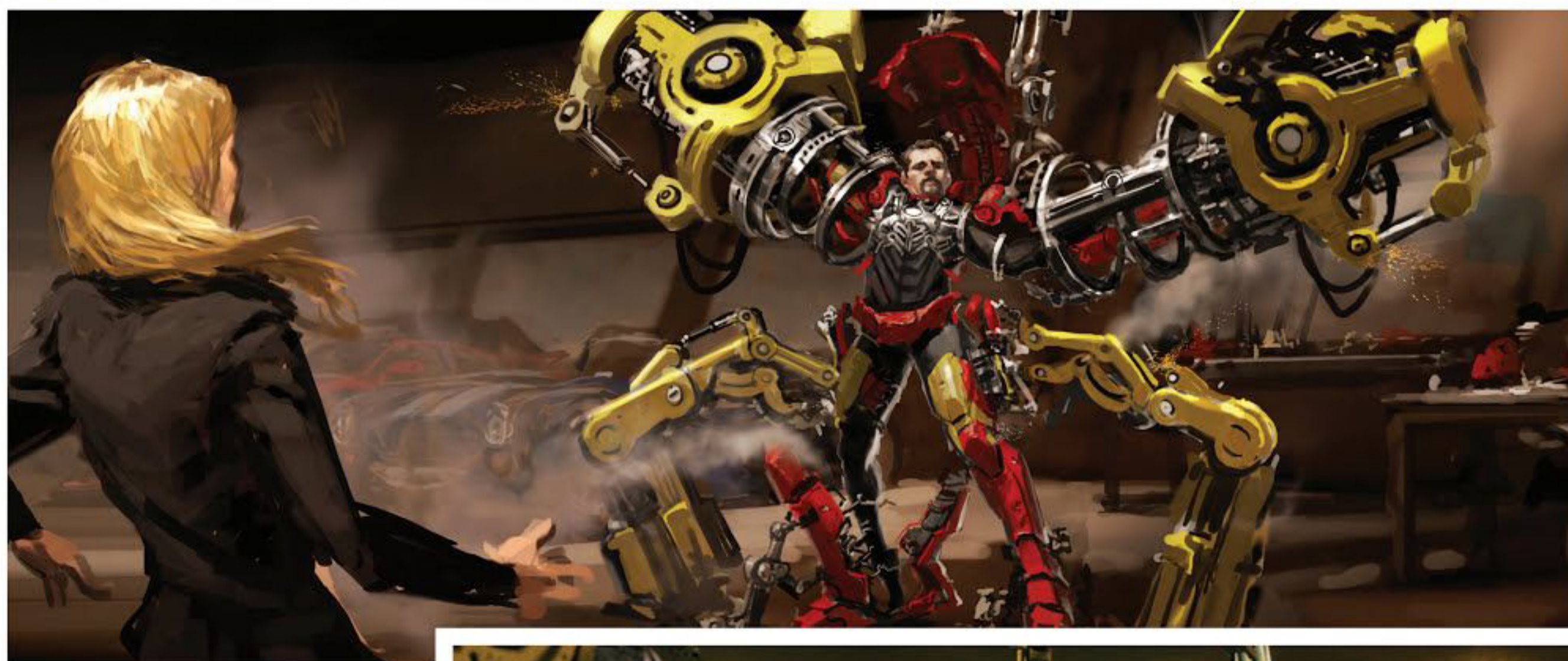


One bit of Meinerding keyframe art (left) imagined Stark's trusted pal Col. Jim Rhodes witnessing the suit up and uttering the memorable line, "That's the coolest thing I've ever seen."

Another dimension of the Suit Up Gantry was to establish it as a believable part of the environment of the Workshop. To do that, Saunders figured it would be effective to create a room set aside solely for the gantry.

Below: Workshop keyframe art (Phil Saunders)





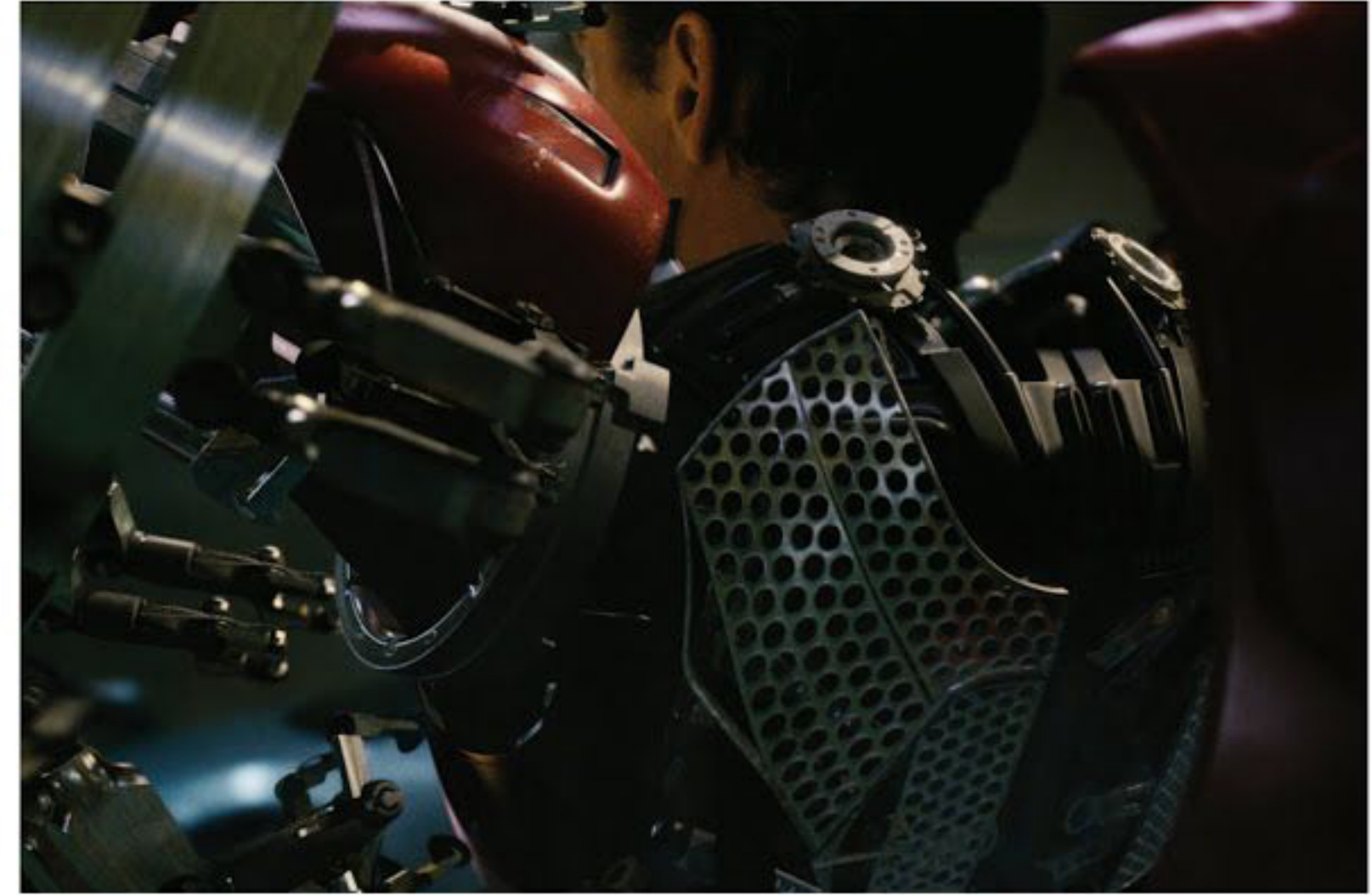
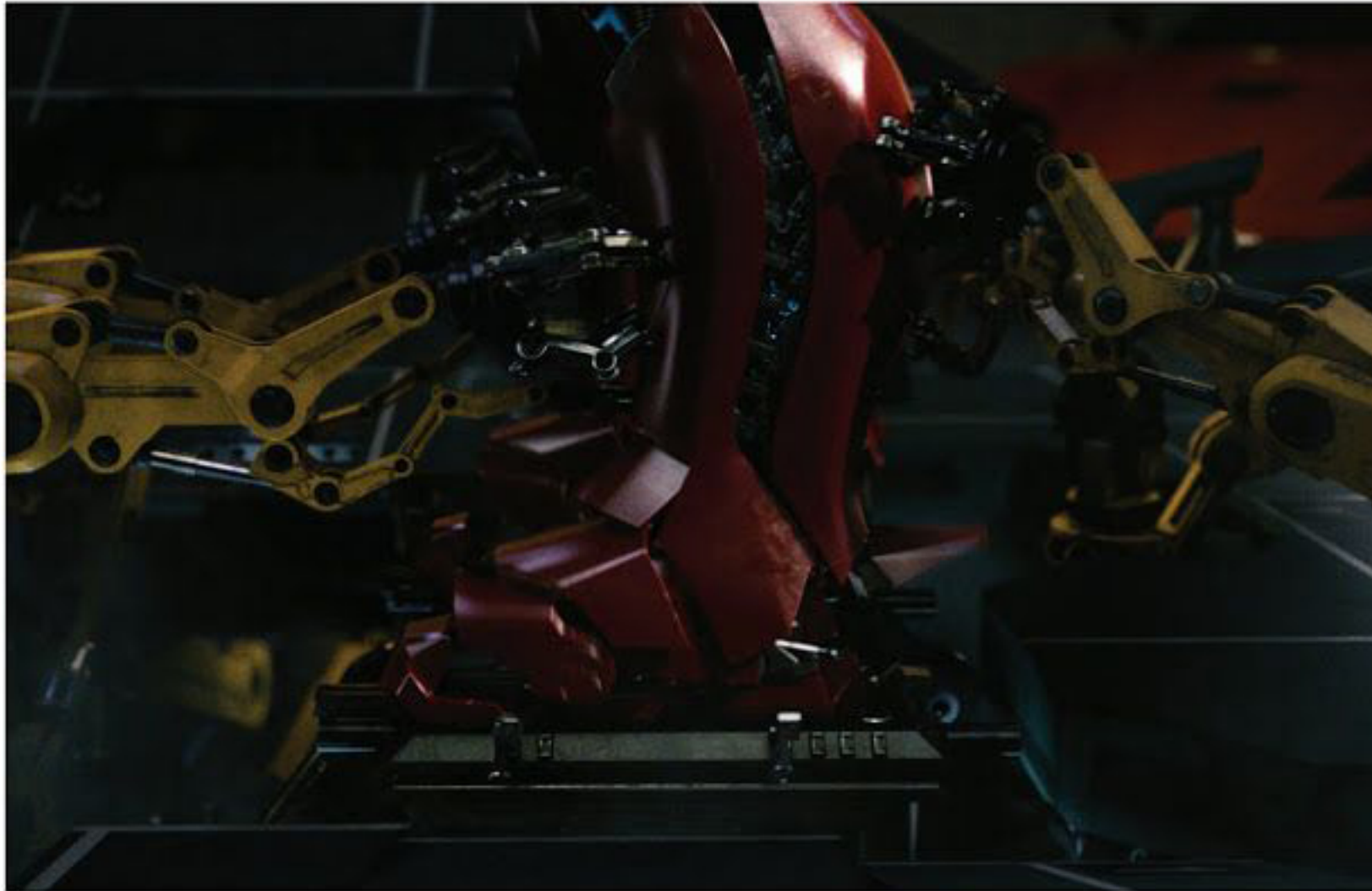
Above: Final Suit Up
Gantry keyframe art
(Ryan Meinerding)

Right: Suit Up
Gantry movie still

After the long process the designers undertook to finalize Iron Man's suit up methodology, the actual filming took place during reshoots.

MEINERDING: "We wanted to set up a comical pose where, after coming back from the battle in Gulmira, he's stuck in the suit gantry and looking very awkward. The final shot ended up with his posture somewhat different than it was in the keyframe art, but the humorous tone remained the same."





Above, right: Suit Up Gantry
movie stills



CHAPTER 4:

SETTING THE STAGE

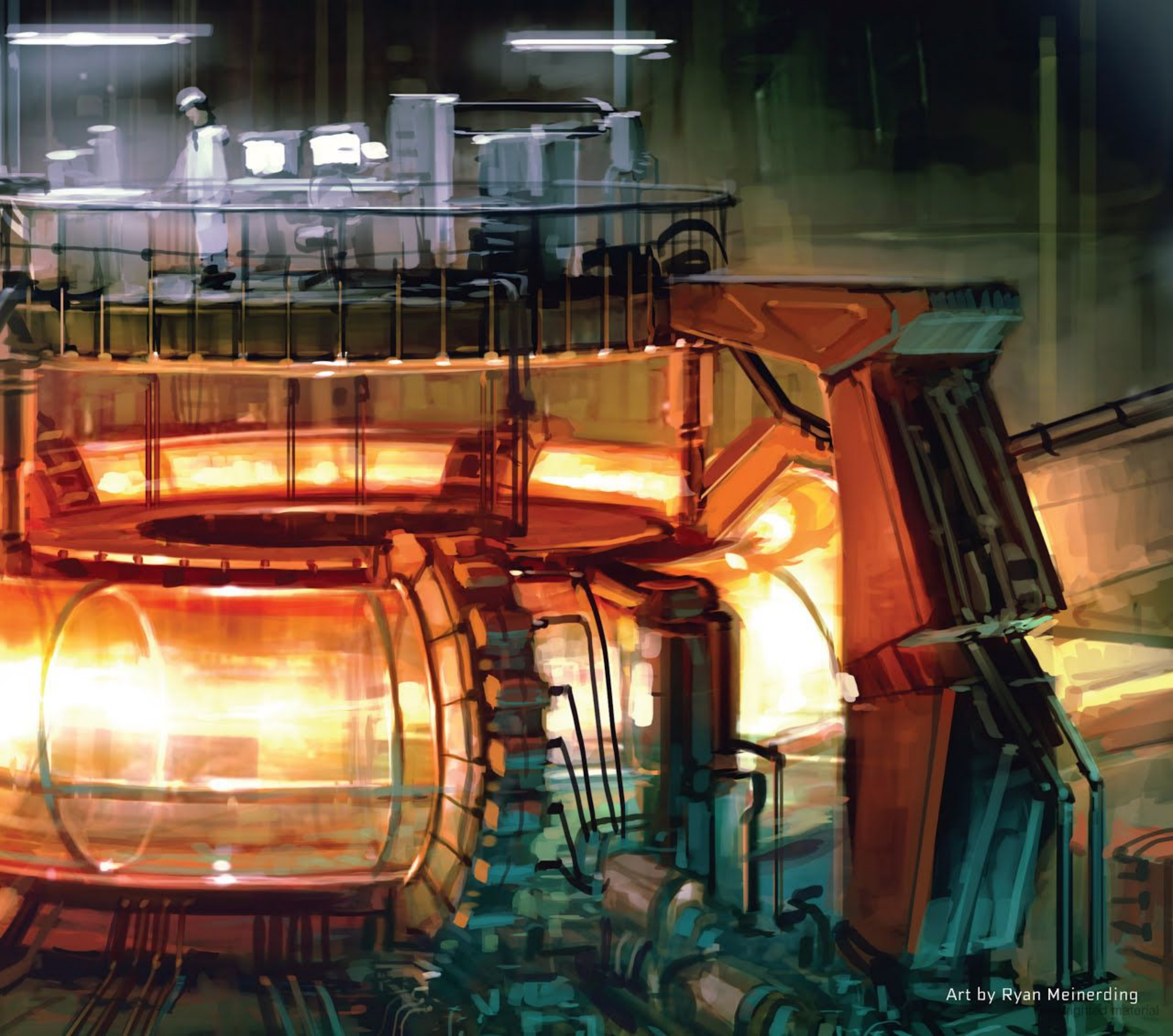
Just as pivotal for the success of *Iron Man* as the quality of the acting, directing and special effects, the stagecraft had to create a convincing, realistic world for these fantastic characters to play against. If the surroundings aren't believable, it doesn't matter how Oscar® worthy any of the other components may be. The audience won't buy it.

But from the gala awards ceremony at Caesars Palace to the climactic battle that raged in the heart of Los Angeles, *Iron Man* was graced with set piece after set piece that allowed the film's wide-ranging and dynamic cast of characters the opportunity to move in grounded, believable environments.

We now move away from suits of armor and other high-tech concerns, and take you inside the design work behind the film's many sets – from the treacherous desolation of Afghanistan's hinterlands and the cold claustrophobia of the Cave to the billionaire's splendor of the Stark Estate, where production designers modeled the exterior of the mansion to showcase Tony's enormous wealth and layered the interior to take filmgoers on an intimate journey into the mind of the hero.

The main character's environs are important for any movie to get right, but even more so for a protagonist like Tony Stark – whose mind is constantly abuzz with new ideas and concepts, and who riffs off the inspiration of his surroundings like an in-the-pocket jazz player. Whether it's inside the bowels of a cave or in the cocoon of his Workshop, the grounding of Tony's character was in the hands of the film's elite production designer, Michael Riva, who elevated the art of *Iron Man* to new levels.





Art by Ryan Meinerding

Unlabeled material

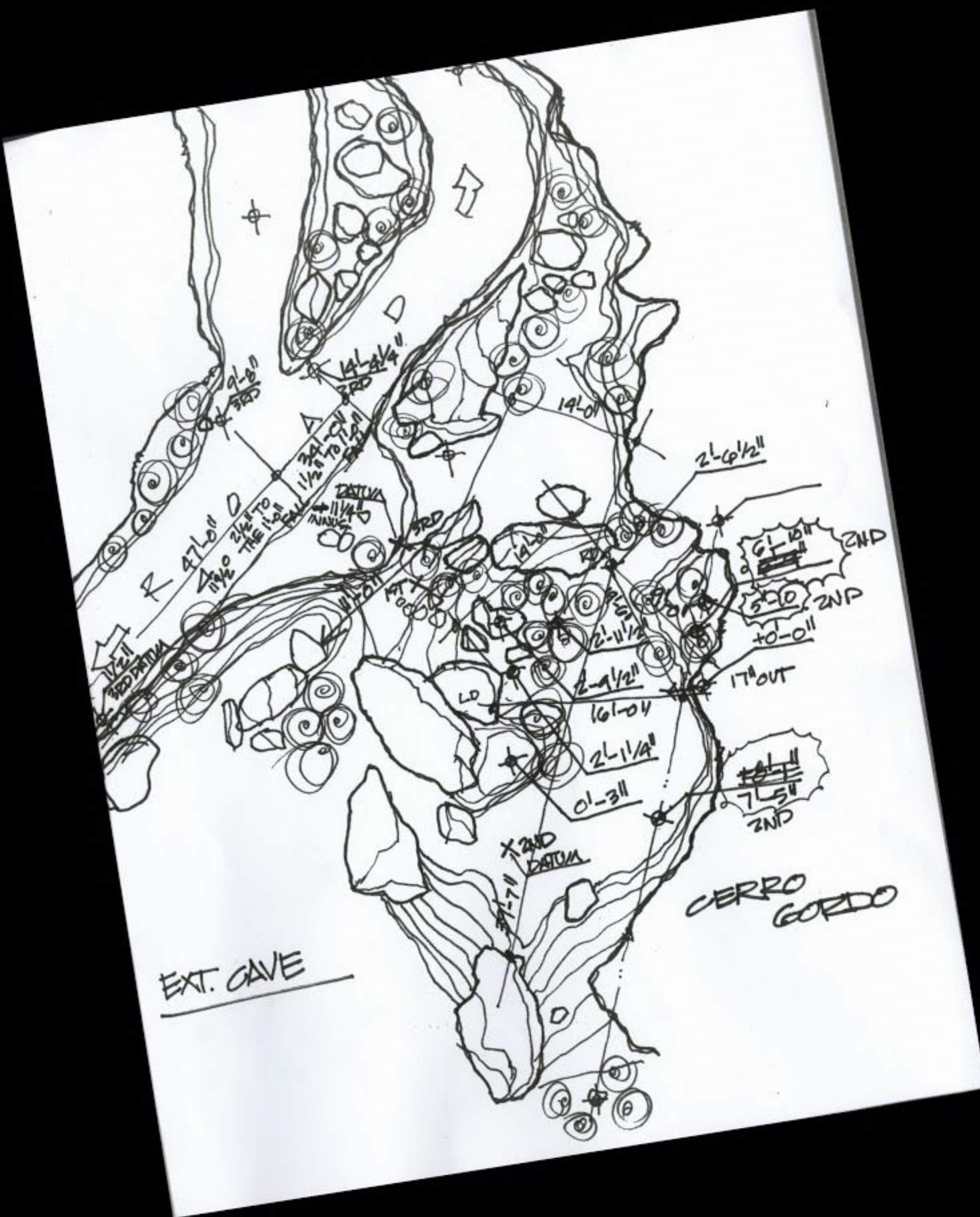


The film's first scene found Tony Stark amid the violence and chaos of the Afghanistan desert. However, the film then transitioned back in time, 36 hours before the weapons designer had his chest violently split open by his own handiwork, to the opulent grandeur of an awards ceremony at a Caesars Palace ballroom in Las Vegas (above, right). Of course, as is typical in moviemaking, the actual set was in Los Angeles. Production Designer MICHAEL RIVA had his hands full getting the job done.

RIVA: "Believe it or not, *Iron Man* had a very restricted budget. We had to make certain decisions about going to Vegas or not for the awards sequence. I would have preferred to go, but our mandate was to use L.A. I thought that with a few additional statues and some lavish ornamentation, we could make the ballroom of a local hotel look like Caesars."







Above: Cave model, top view

Tony Stark's "home" in the first part of the movie is a cold, dank hole deep under the ground, the Cave. It was designed to be a place where Stark would suffer greatly on his way to constructing the defining achievement of his life. But it was also designed to be a place where he could eventually escape from. Inspired by research into the caves of the Tora Bora region of Afghanistan and Pakistan, Michael Riva's map outline (left) indicates the looping bowels of the cave.



Left, below: Cave model
(Tony Bohorquez)





After the maps were drawn and a basic layout agreed upon, set designers built up a Cave model that included lighting and action figure placement.

RIVA: "Tony Bohorquez did a beautiful job with the Cave model. Even in this day of computer imagery and being able to walk through a set on a computer screen, it really does help to see a model. There's nothing that compares. It's very tactile. With a computer image, you can't touch it, you can't easily see how the light falls on it. Models take you to that part of your brain that wants to see things with dimension and scale."





Top: Cave model (Tony Bohorquez)

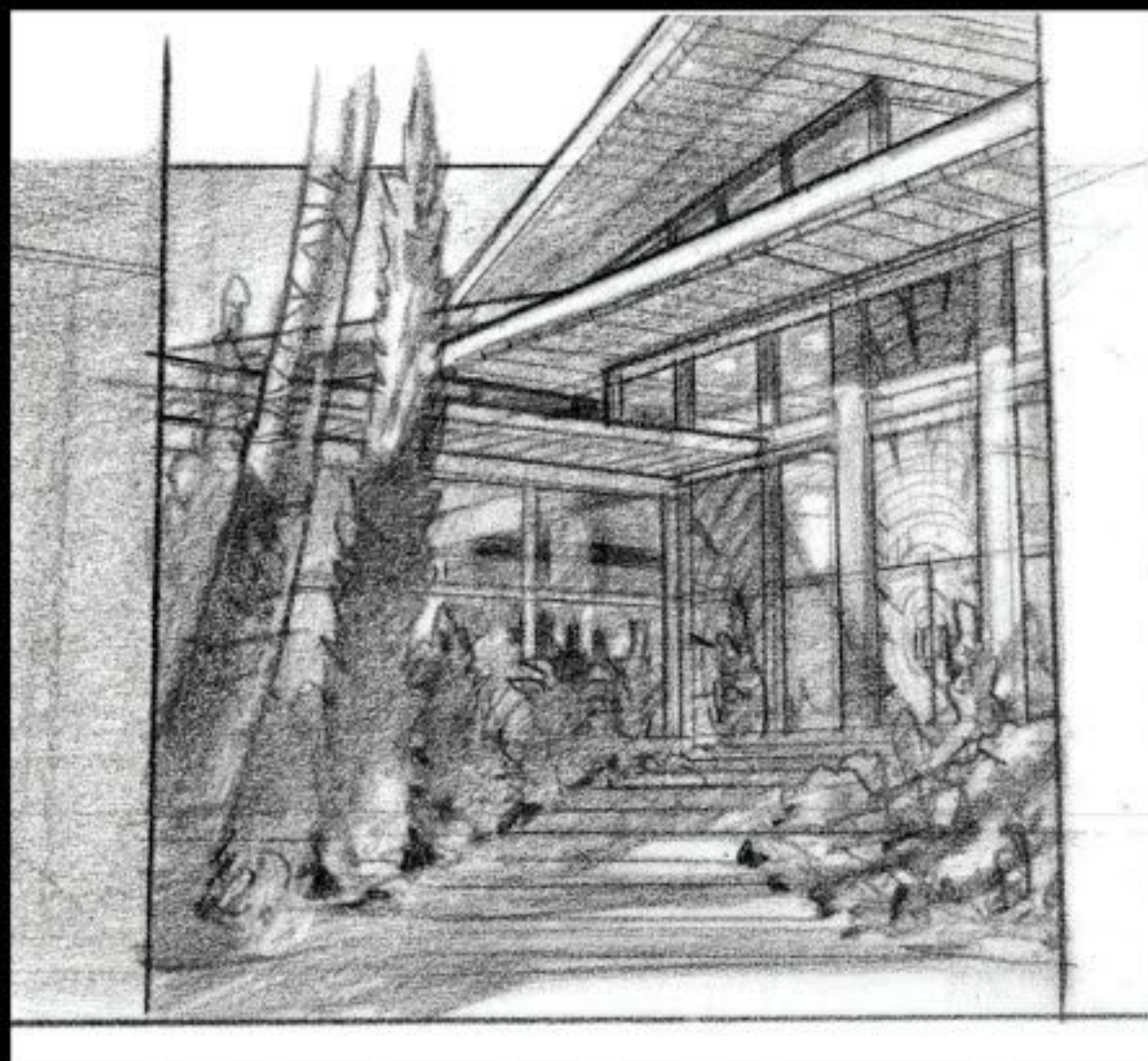
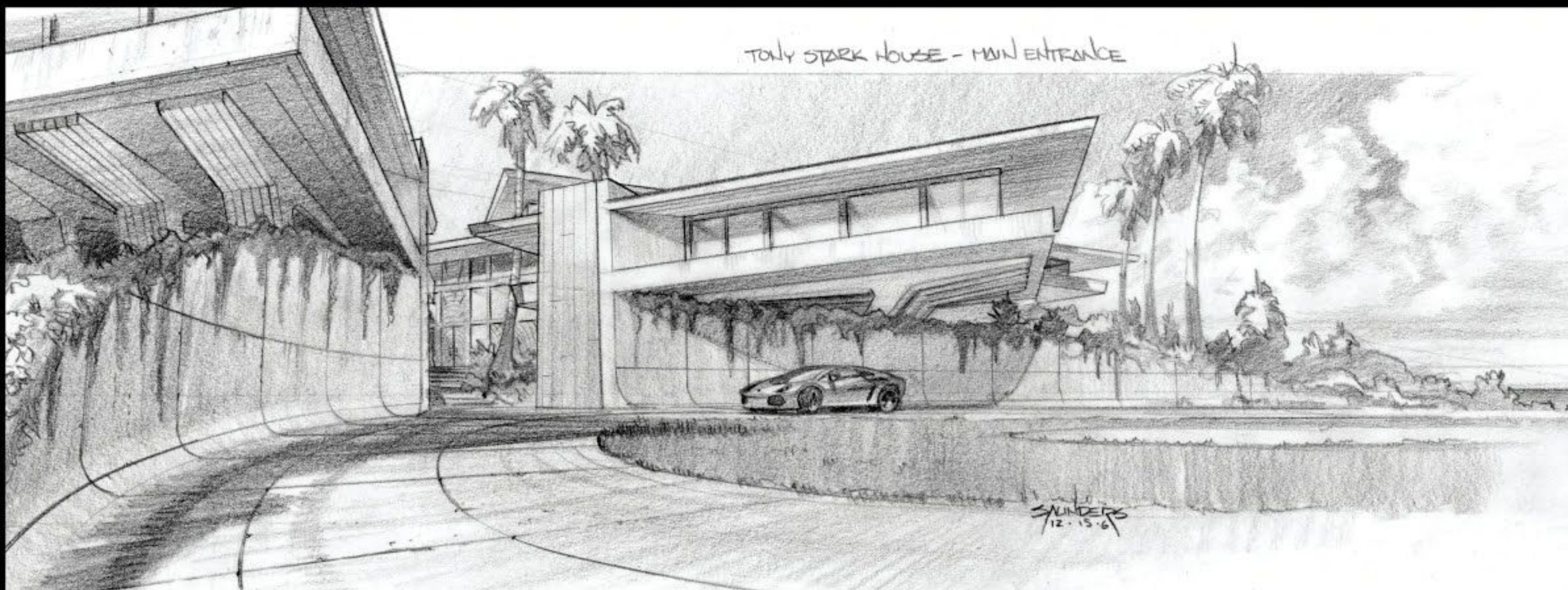
Bottom left, right: Final Cave set design

After doing extensive pre-vis work with the Cave model, propmaster RUSSELL BOBBITT filled the subsurface environment with the Stark Enterprises weaponry that would form the basis for the construction of the Mark I suit. One

other interesting aspect of the Cave setting wasn't in the design layout: It was in the air.

RIVA: "From the beginning, I insisted that we freeze the Cave to be true to the ideal. Everyone was very uncomfortable but Jon insisted we go there for realism. We froze the Cave down, and you can see the breath coming from Robert. It added a necessary sense of urgency and danger."



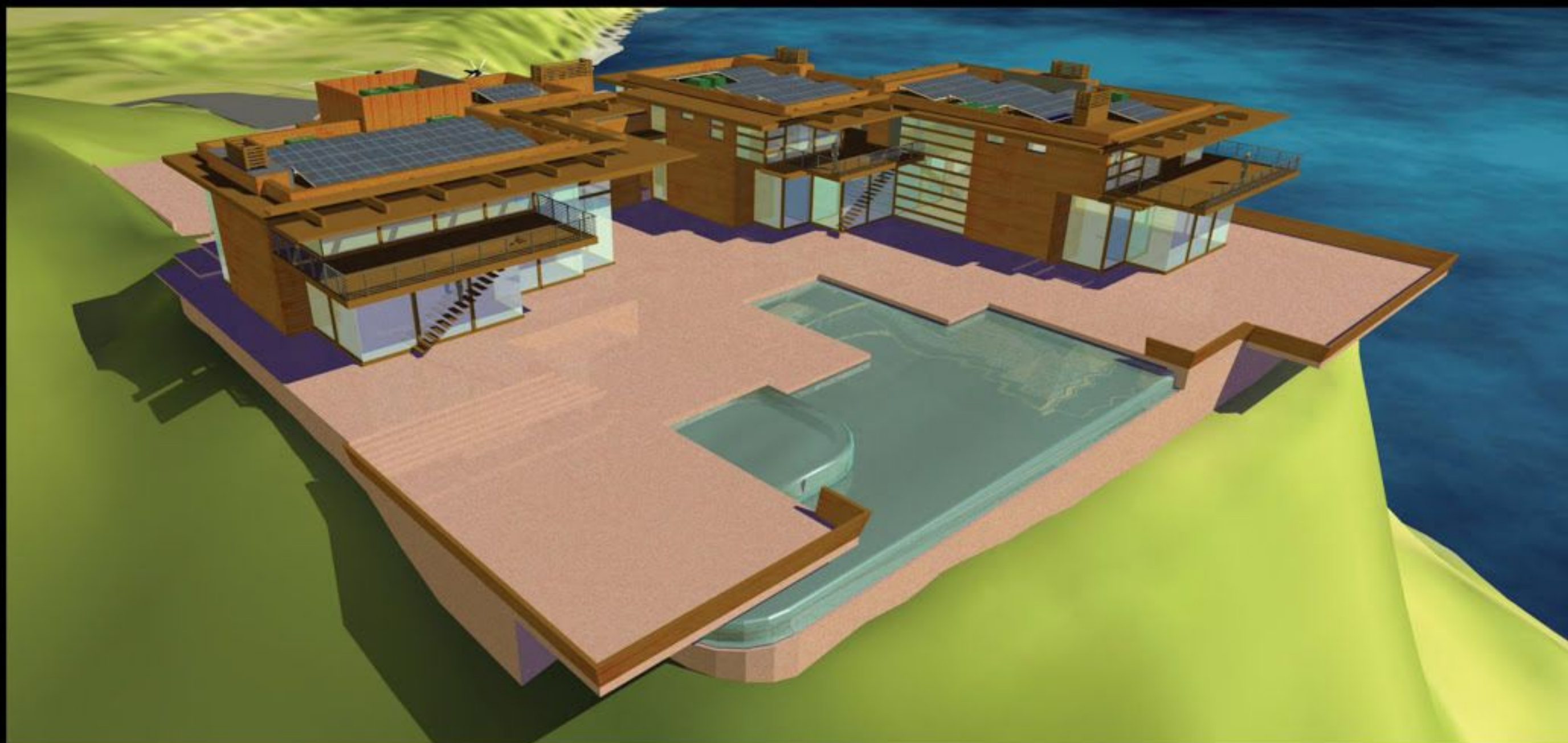


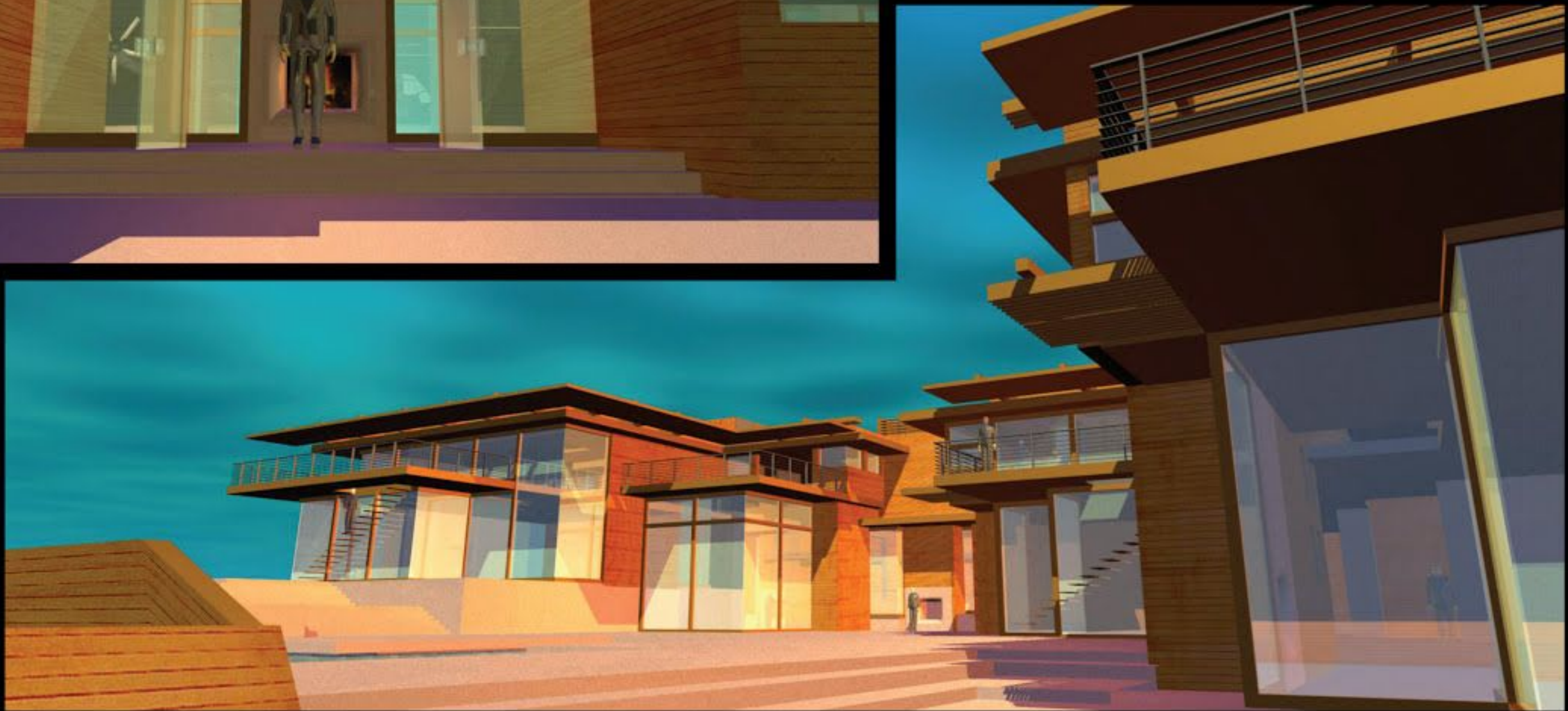
In their early location discussions, Riva and concept artist Phil Saunders had settled on the environs of the Stark Estate: Point Dume, a protected peninsula north of Los Angeles that offered the kind of unique vistas and grand heights that speak to the wealth and power of a man like Tony Stark. Building up to a towering cliff as it thrusts out over the water, Point Dume was an expansive plot of land that would give the Stark Estate both privacy and an uncommon individuality.

But after determining the location, there was the matter of designing the house that would sit upon this evocative landscape. These early sketches of the Stark Estate

by Phil Saunders (page 110-111) played off Riva's inspirations from renowned California architect John Lautner.

RIVA: "I'm a big fan of Lautner; I've been influenced by his sensibilities in many films I've done. With this design, I was playing with the notion of a more angular structure, full of triangular and rectangular aspects, and Phil elaborated on that in his sketches. We also had a long driveway that we eventually used in a deleted scene. But there didn't seem to be a focused, core piece to the house, so I started going back to the idea of a huge, rounded, windowed place."





The house design continued to evolve, particularly after the possibility was raised that Stark might build his home with eco-friendly values.

RIVA: "A friend of mine has a house in Malibu that is so beautifully designed. His house is really, really gorgeous, with wood all around him in a classically elegant style. It inspired us

for a few weeks to suggest that maybe Tony was a bit more of an Earth-friendly guy."

But in the end, the main elements of this design were discarded in favor of a design themed with more of a billionaire's extravagance, the more rounded, overly elaborate design that would make it to the final cut.



This magnificent house sits on some of the most prime real estate in the world (above), making the reality of it seemingly all that much more impossible. But when you're crafting the physical universe of a character that is as profoundly wealthy — and imaginative — as Tony Stark, designs that seem impossible are what you are actually trying to achieve.

SAUNDERS: "The organic shape of this house is extremely futuristic and high-tech. Probably the degree of cantilevering that we've created in the set would be impossible with today's technology, but that just helps it seem all that much more believable. It speaks to the really advanced technology necessary to keep it all supported."



Initial scouting for exterior and interior shots of the Stark Estate reinforced one undeniable fact: There was nothing available to the film's producers in the real world that could match the upsized scale necessary for Stark's character.

RIVA: "We exhausted every house, every location, every possible place to go. Our biggest challenge was finding a house we could possibly have access to that would represent the wealth of Tony Stark. He's Microsoft rich. His tastes are very elaborate and he's very rich, and that's the worst kind of combination to try and recreate in a movie."

Above: Stark Estate concept art (ILM)

One of the indicators of Stark's elaborate taste was the estate's grand living-room space (below), ostentatiously thrust out over the water and held in place by a series of buttresses that were set atop the ocean exposure of the Workshop below. The placement of Stark's garage underneath the living room ended up being Phil Saunders' sole contribution to the space that would later be referred to as the Workshop.

This economically staged area would provide for one of the film's most comedic story beats: Following the maiden voyage of the Mark II suit, Tony Stark's attempt to land his formidably heavy armor on the roof causes him to crash through the floor of his living room and onto the hood of a prized automobile in the Workshop. Without the intense planning put into this set design, that beat would not have been inspired.





RIVA: "We didn't finish the total design of the house until we finished shooting. And by the end, it would have cost us easily seventy or eighty million dollars to build that house. Conceptually, it is a very difficult space, built into the rock of Point Dume."

Extensive pre-visualization was done on the estate. Riva hiked the extent of Point Dume and took picture after picture of the landscape, then painstakingly mapped out the area and input the data into a computer for visual-effects designers to situate the house's CG elements.





The final design of the Stark Estate fulfilled every aspect of the owner's personality that the film's set designers were going for.



The interior of the house included an elaborately designed bathroom (left, below) that didn't make it to principal photography — an early morning scene that indicated the degree to which an "awakening" Jarvis set up the house and maintained order.

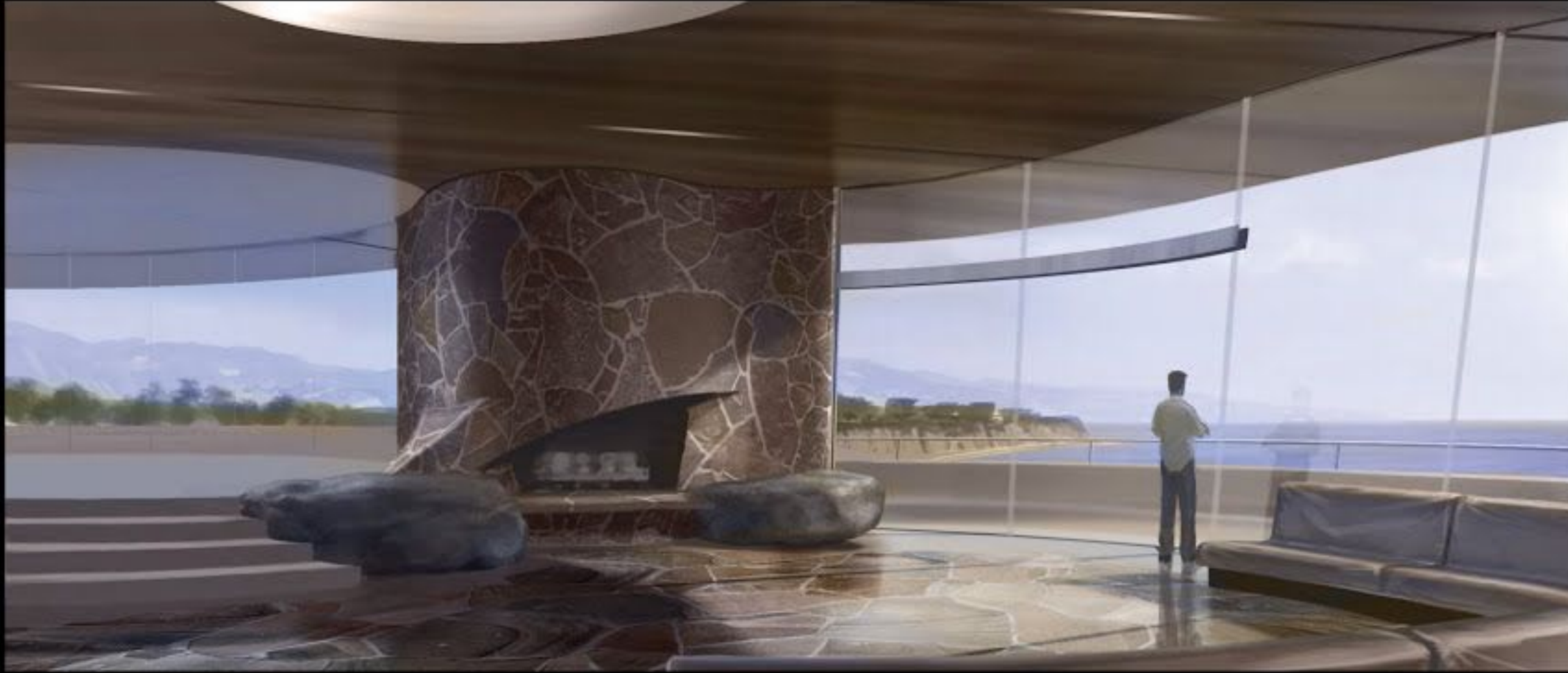




RIVA: "We designed the bedroom (left, below) so the windows would go translucent or opaque on their own. It was very complicated to figure out the logistics on that, with long discussions between the director of photography and visual-effects guys. Eventually, it rested with visual effects."







The window vistas provided a very appealing aesthetic space for Stark to live in, but gave designers the added problem of filling all that in with things to see.

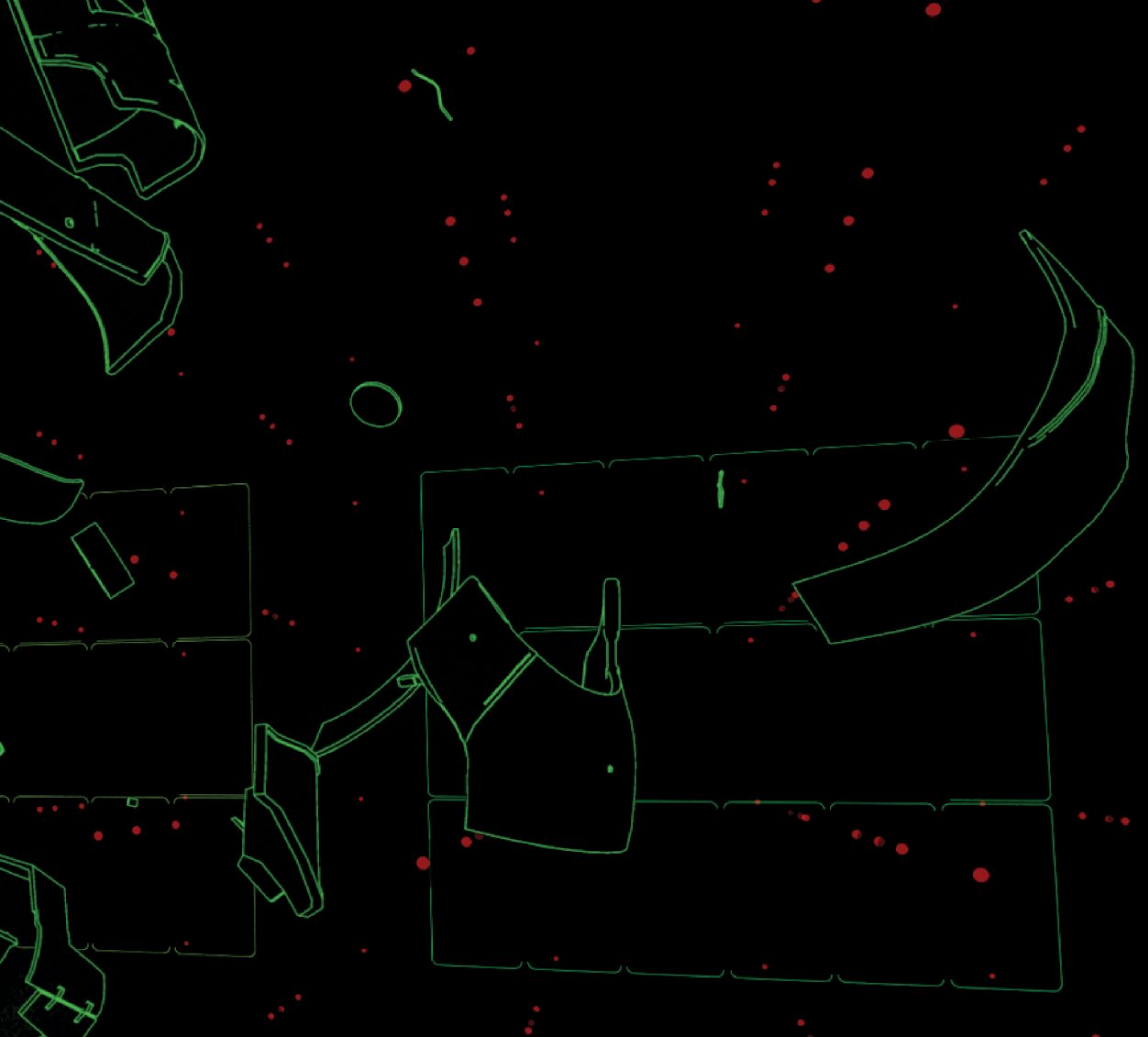
RIVA: "The set was huge! It was about 220 degrees worth of outside exposure. With that many windows and that many lights coming in, it was quite a challenge."

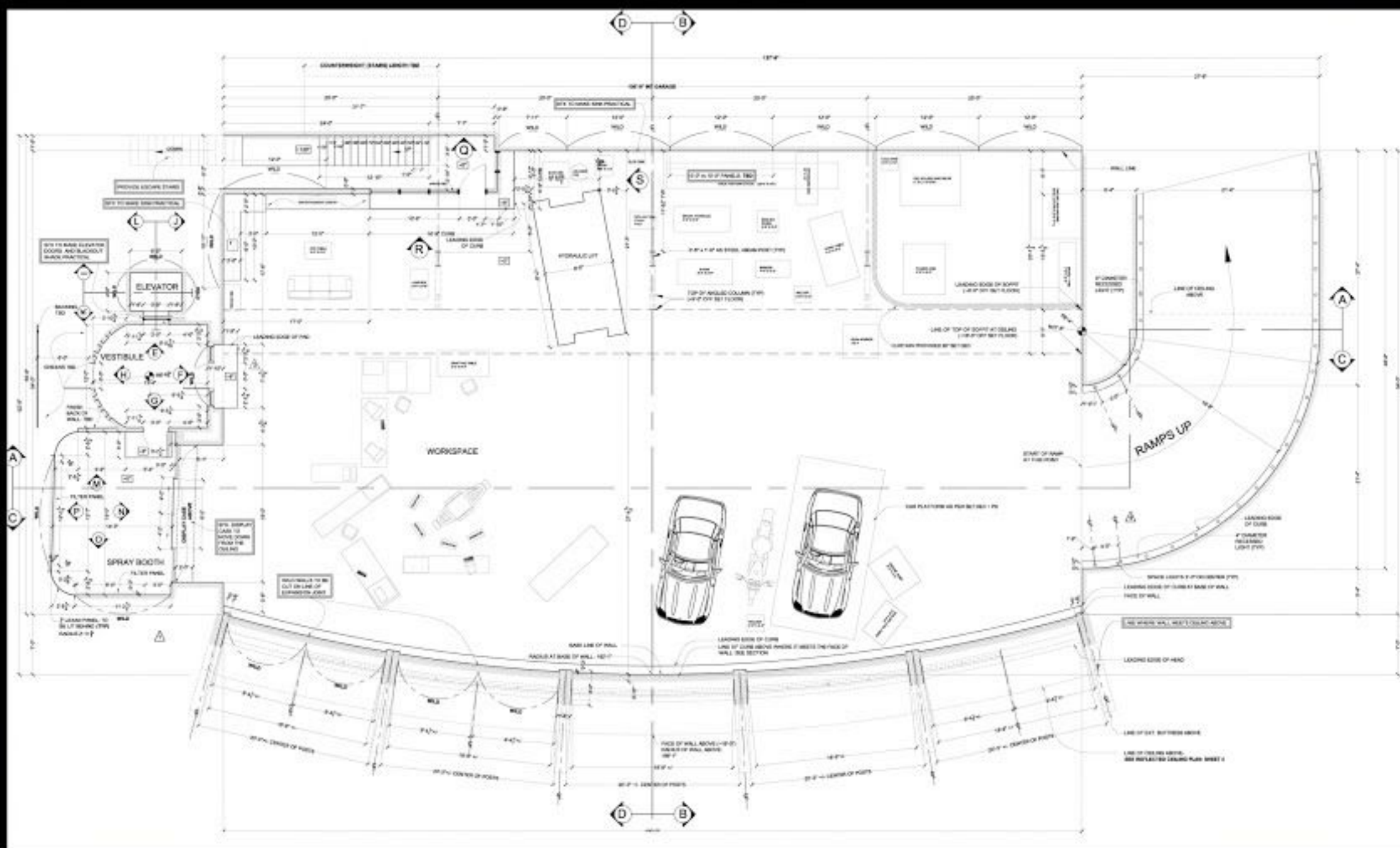




Working with Director of Photography Matty Libatique, Saunders hit on an idea in which lights were installed behind slits in the ceiling so that the light source was always invisible (above). Further adornments for the living-room space, like the cascading wall of water (right), were a design element approached with great difficulty — but with inevitable success — by the film's visual-effects crew.



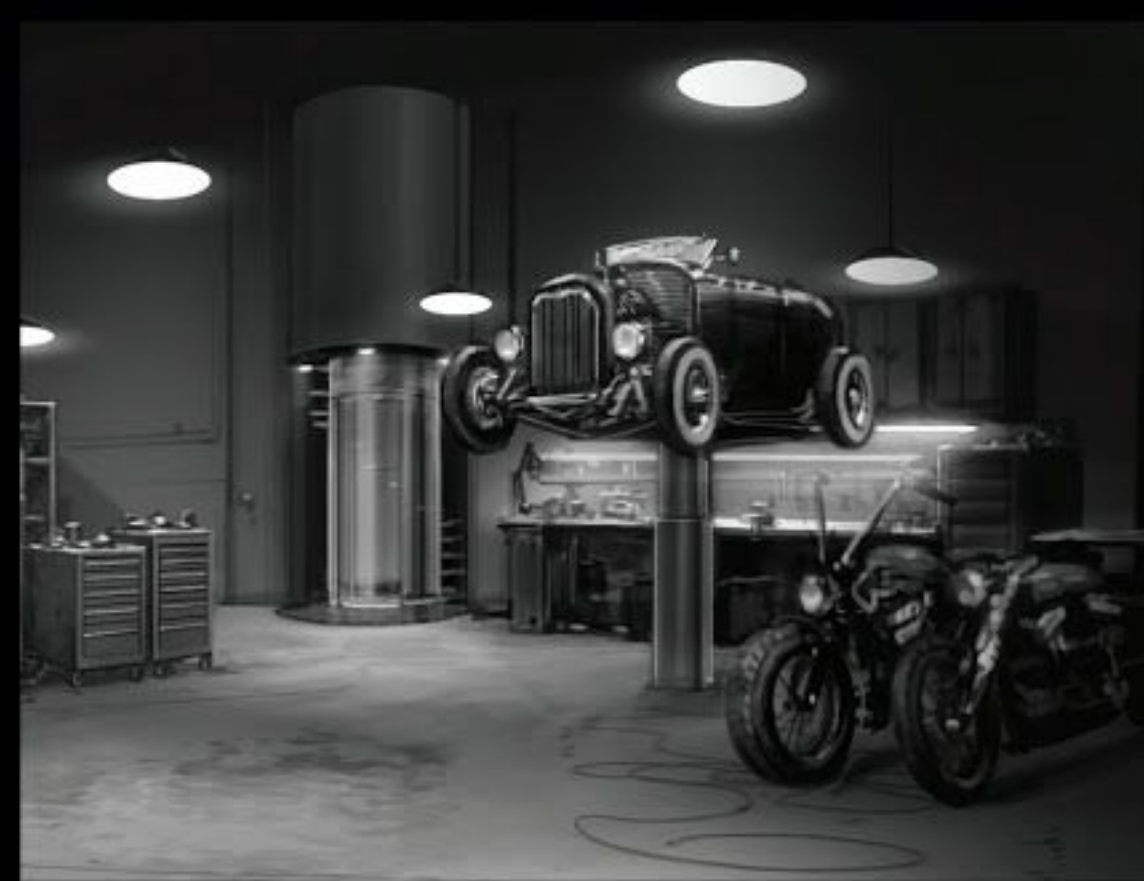


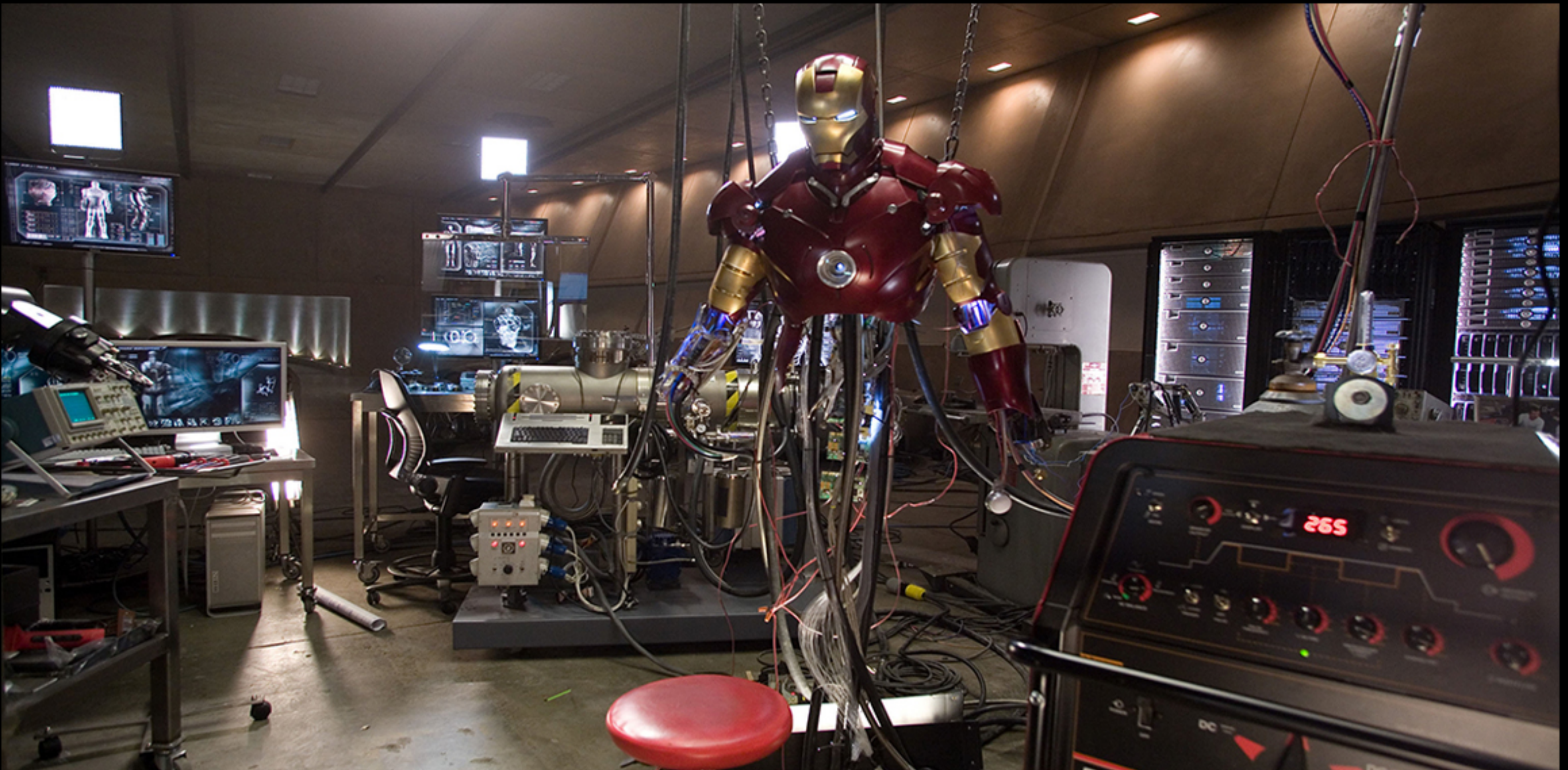


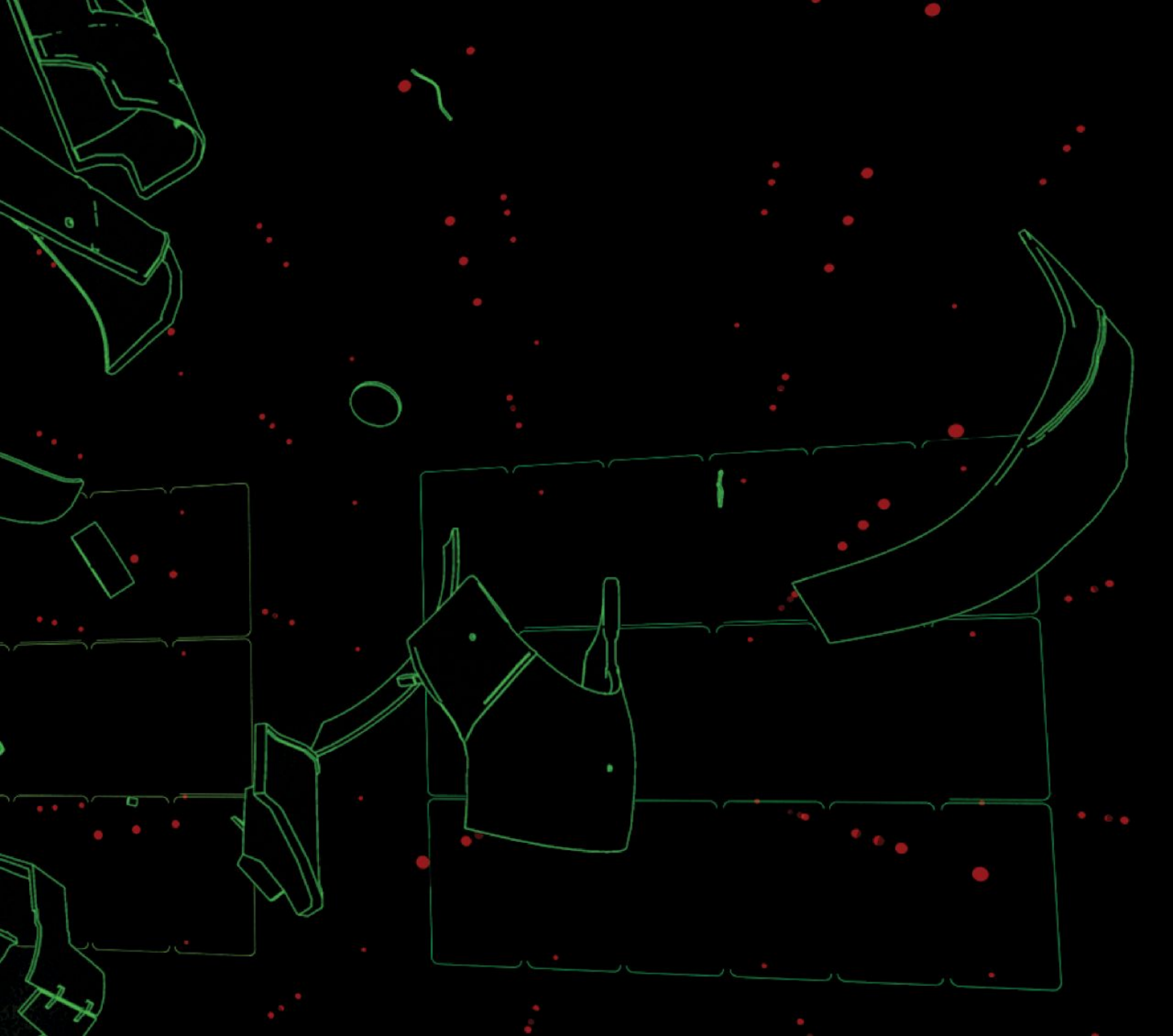
Tony Stark's Workshop served as the proverbial womb for the development of his biggest, greatest ideas. Unlike the extravagantly sterile design approach of the upper levels of Stark's house, the Workshop was awash in reflections of the genius developer's true personality: mementoes and keepsakes, photographs of his father, his fleet of automobiles, and the tools of his trade laid out in all directions around him. Concept artist Ryan Meinerding was given his marching orders by Jon Favreau: Think "dirty garage."

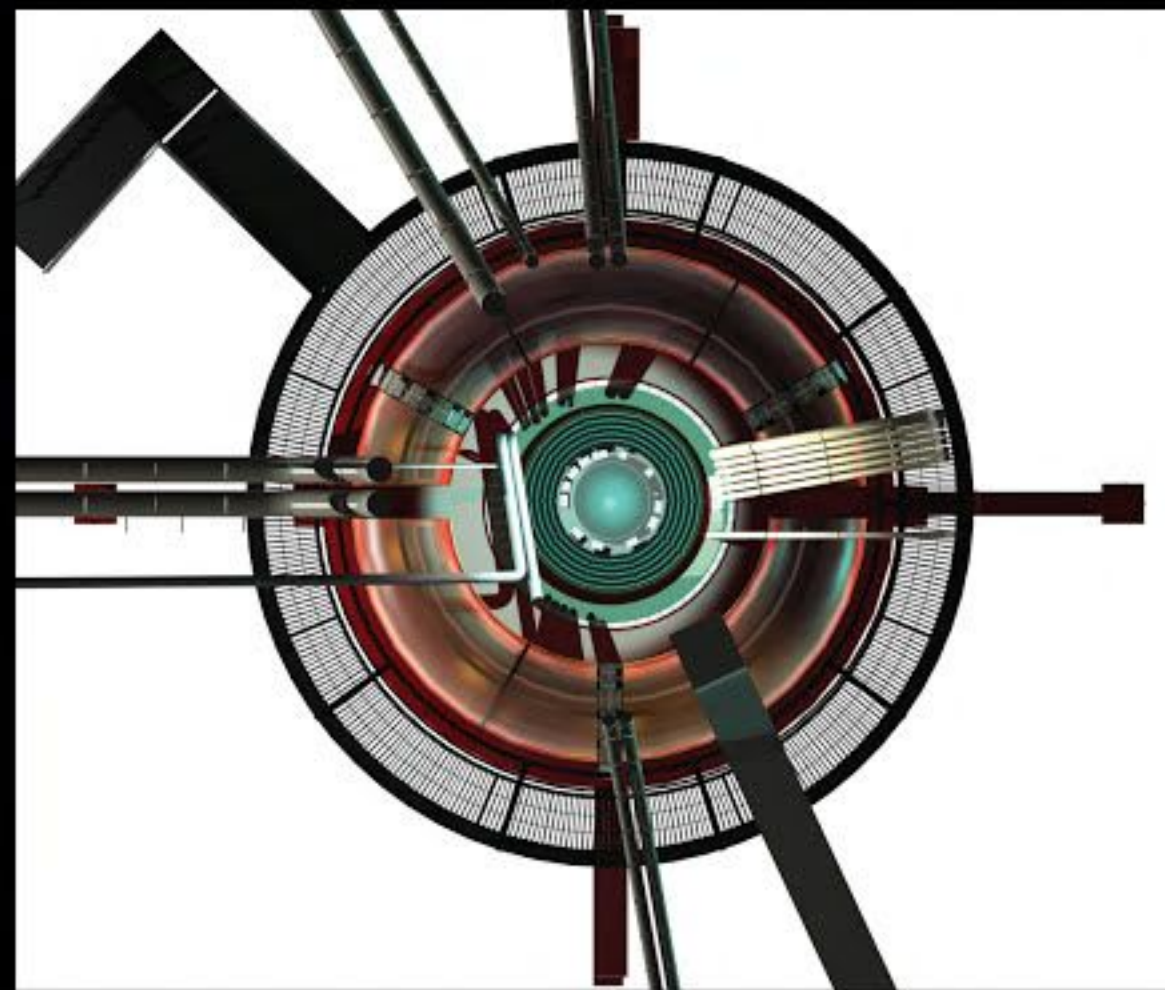
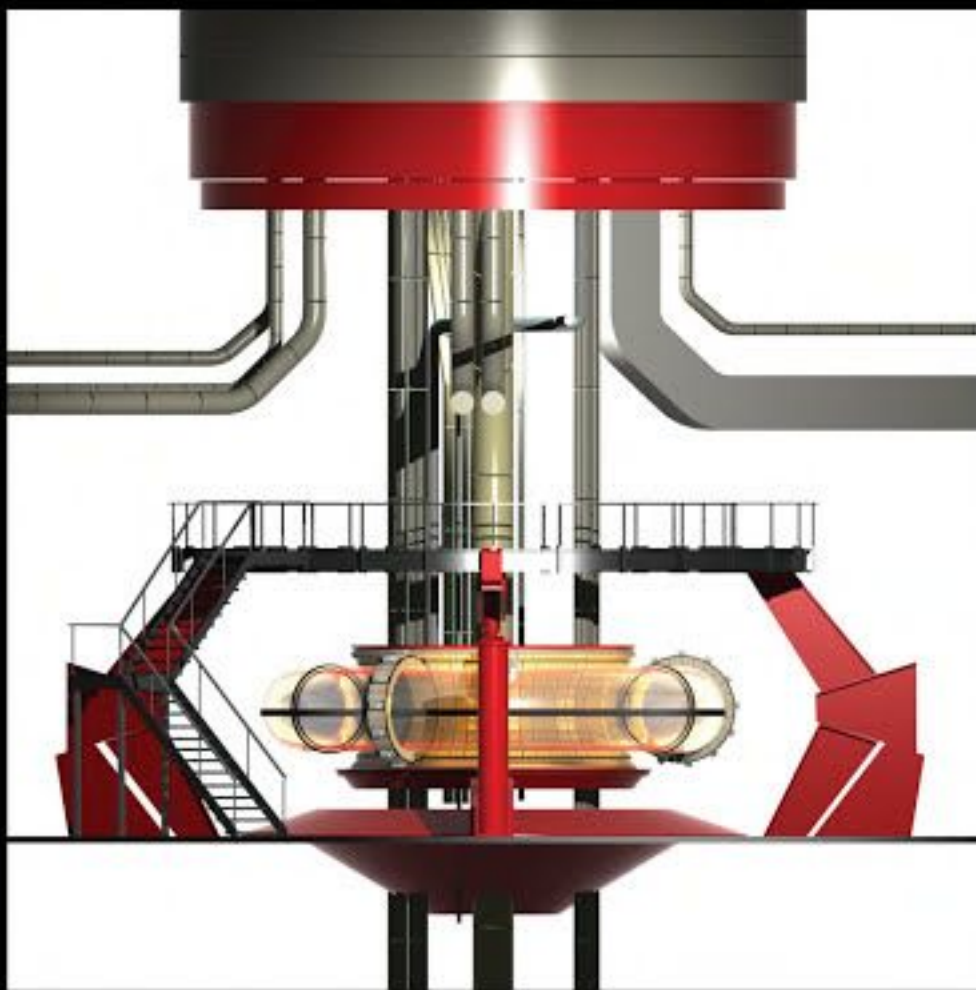
Left: Workshop blueprint

Below: Keyframe art (Ryan Meinerding)

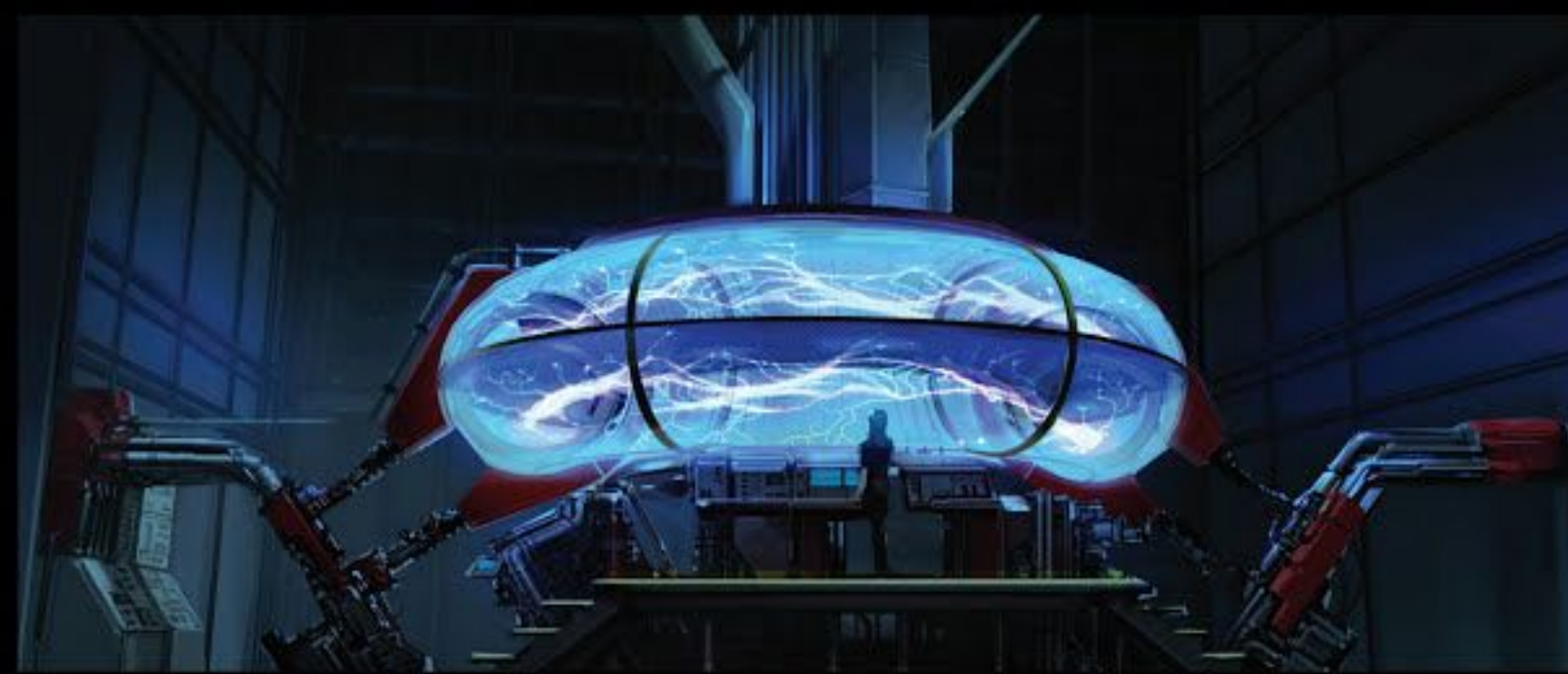
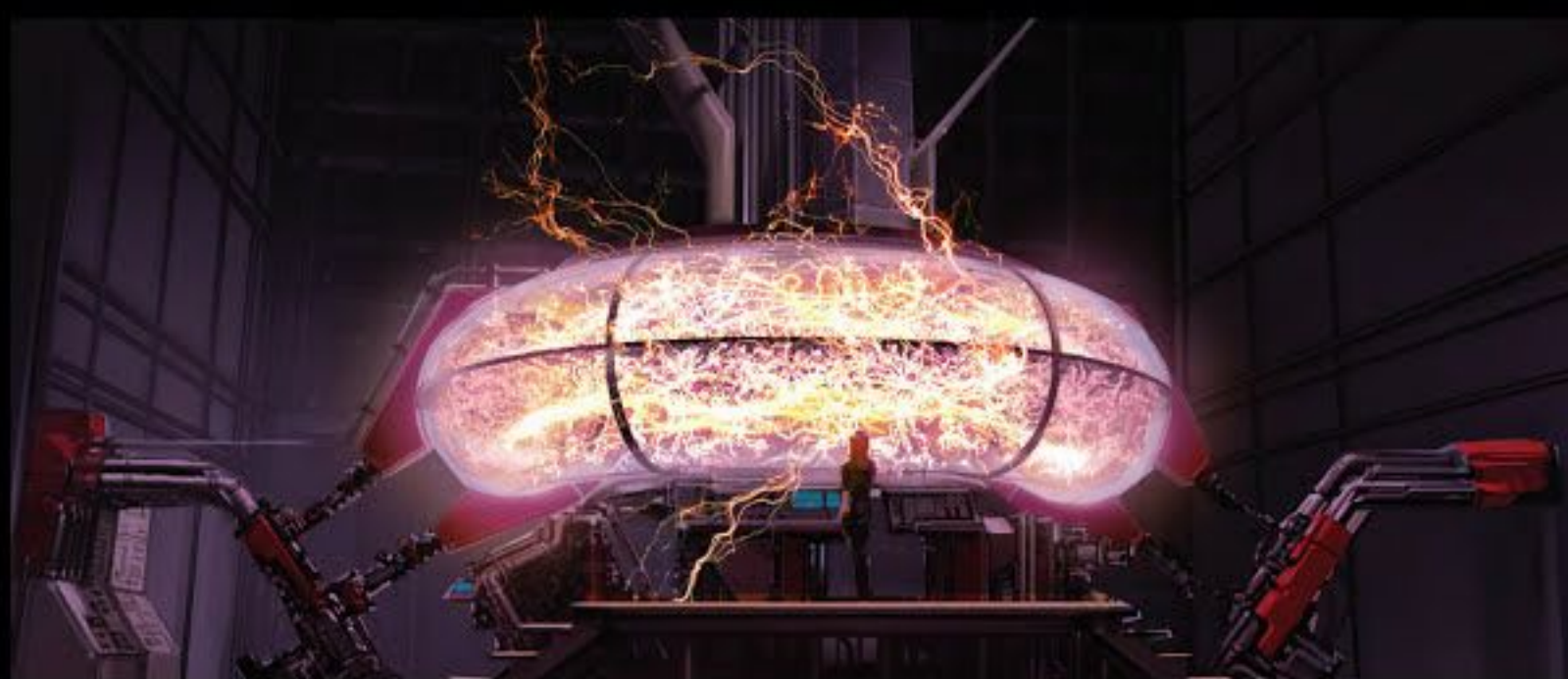


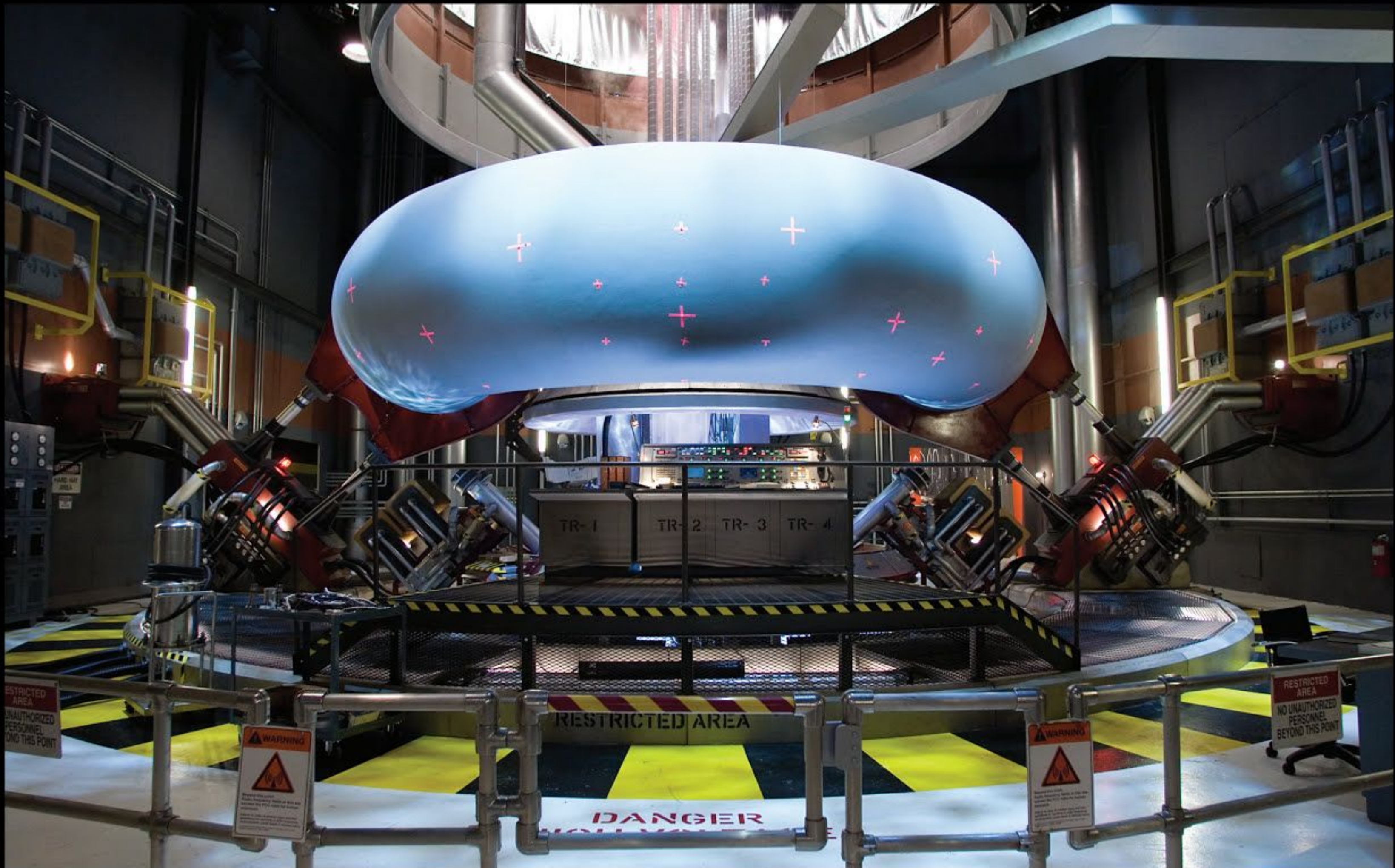






The Arc Reactor was inspired by the Tokamak, a real-world fusion device still in development. Housed at the Stark Enterprises campus (above), the Arc Reactor was designed by Meinerding to include the concave center shape that distinguished the Tokamak. The designs of the Arc Reactor structure (left) played around with the location of the structure's walkway and catered to shots that would need to be established from the rooftop looking down. The first design placed the catwalk above the Arc Reactor. The final design placed it at the reactor's lower level.





The Arc Reactor's meltdown and spectacular explosion in the film worked off Meinerding's keyframe art (page 130).

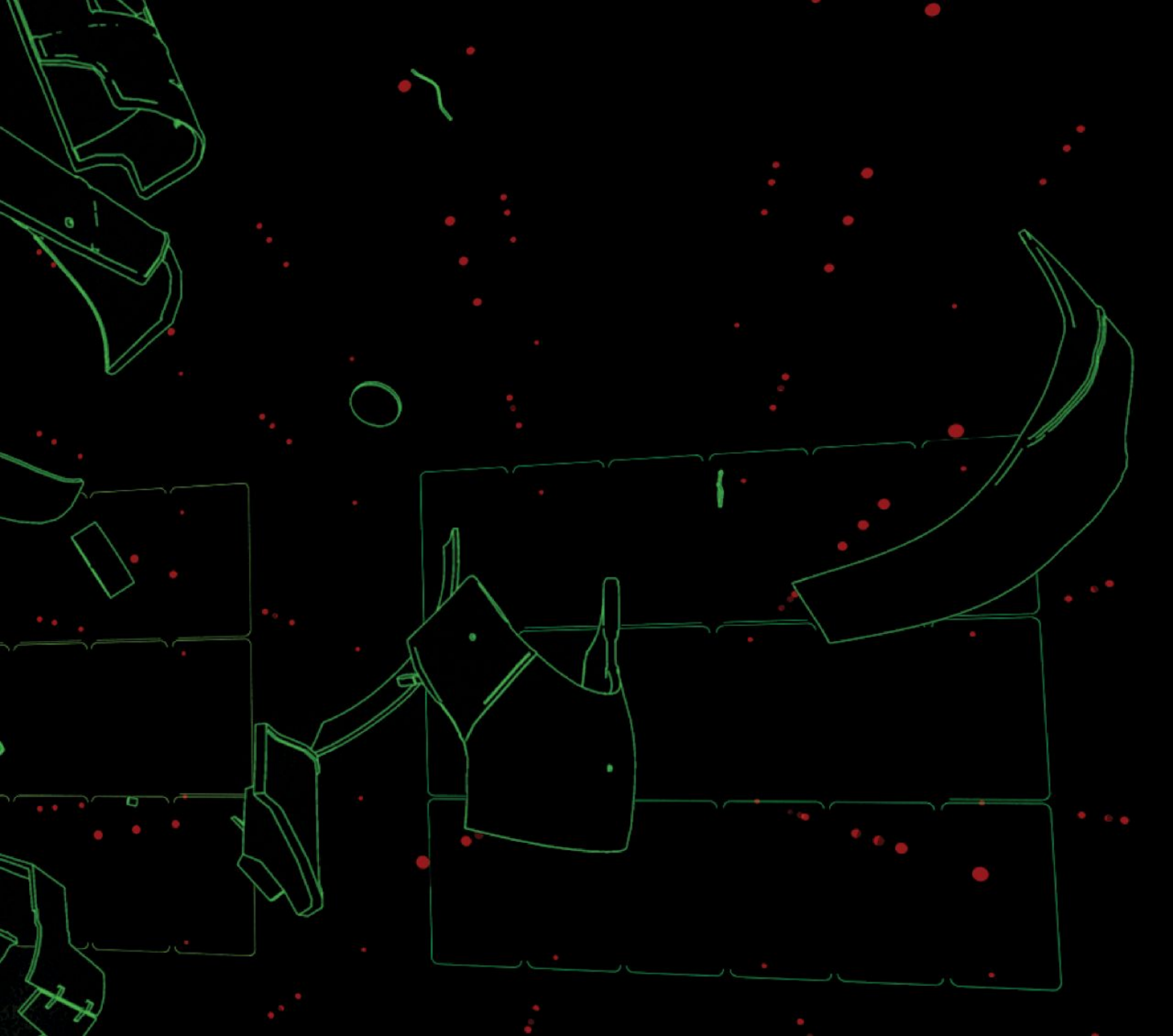
Above: Arc Reactor movie still

The Afghan town of Gulmira was where Iron Man first put himself in the role of avenging hero, bringing the full force of his newly developed armor down upon the terrorists menacing the local populace. The location of this key scene was, again, not shot in deepest Afghanistan, but Riva knew he could find someplace in the Los Angeles area to imitate the remote landscape.

RIVA: "We settled on a place that had been used for a couple of old Western TV shows. Really bare bones. It took four weeks and we built up the village out of our surroundings. Had a lot of rubble strewn around. I'm happy to say that the place is still in use for other film shoots."



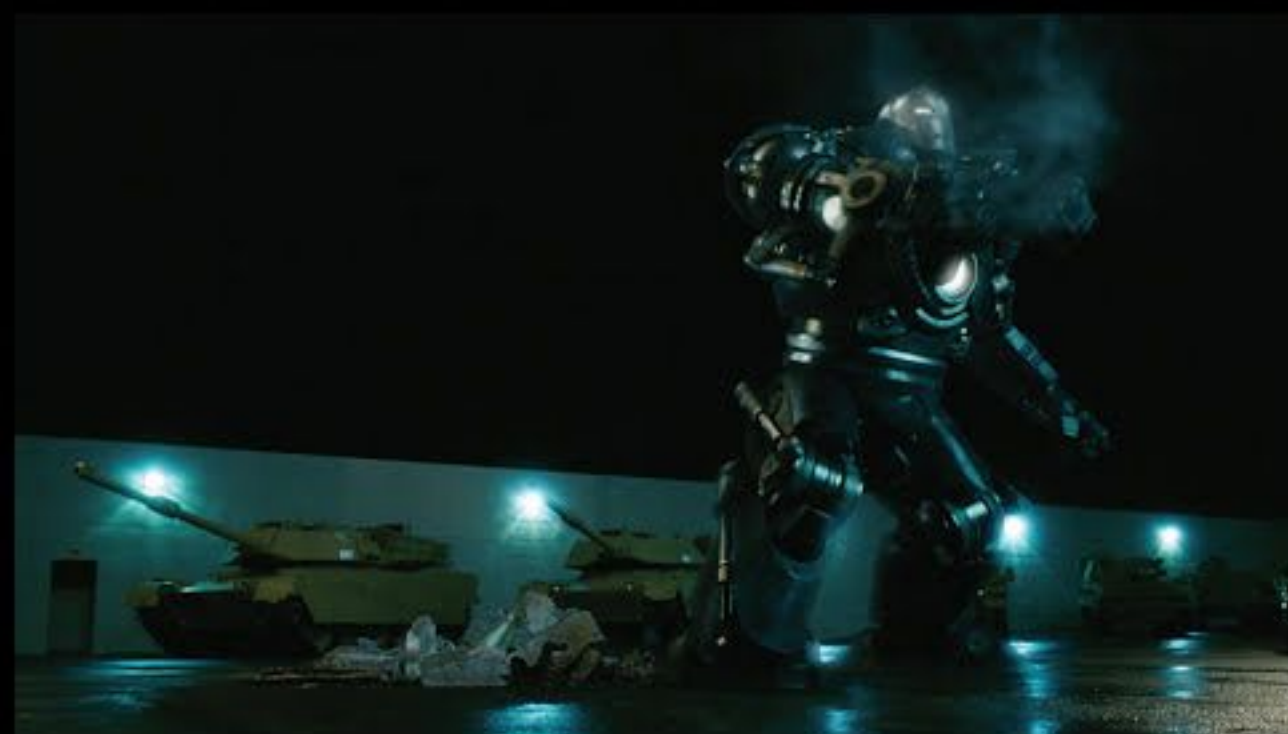






The Final Battle involved several set pieces, but none more daunting than the Los Angeles freeway, which involved an incredible amount of advanced planning in order to properly stage the shots, as well as getting the proper permissions and permits to shut down L.A. traffic.

RIVA: "Logistically, it was difficult. Iron Man and Iron Monger had to exit the basement of the building that they had first crashed into, then pierce through the wall where Jon wanted them to drop onto the street and end up in traffic. We had to find a location with a wall adjoining a roadway to set the stage for this. We found one that fit the bill in Long Beach, and then went through the long permit process. It was worth it."



FORGED IN IRON

By the time Iron Man's first appearance hit newsstand counters, spinner racks and drugstore shelves in 1963, the medium of comic-book artwork had evolved far past its primitive origins of the late 1930s. The Marvel Age of Comics, ushered in by Stan Lee, was just beginning to reshape the industry landscape with its imperfect heroes, trendsetting artists and dynamic, pop-art layouts. But one thing that was an indelible part of comics well before Iron Man made the scene – and remains so to this day – is the nature of comic storytelling. The panel-by-panel exposition of character and plot development is an inherent part of what makes comics the artform they are.

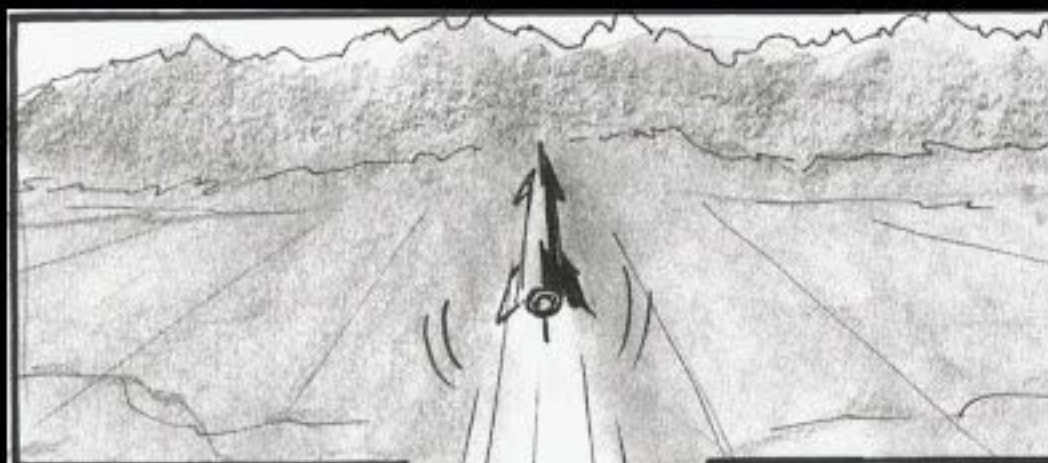
And it is this very fact that gives comics and film their close kinship. Comic storytelling is inarguably similar to the storyboarding process in film, the source material for what later winds up on the silver screen. We now track the storyboarding process behind Jon Favreau's vision for *Iron Man*, providing insights into the creative circle of which he stood solidly in the center.

As *Iron Man* was in its earliest stages, the script was being developed concurrently with the look of the film. For many movies, this might be a sign of dire straits, where concept couldn't possibly catch up to execution in a demanding production environment. But it turned out to be fortuitous, as the nimble design team turned out concept after concept that wound up inspiring the writers and producers to go in directions they hadn't previously considered. Conversely, the writers were able to count on their concept artists and storyboarders to accurately – and quickly – turn their ideas into visuals that Favreau could use to work toward his vision.

The result? A critically acclaimed blockbuster of a film. Forging iron, indeed!







For a film as heavily laden with gee-whiz action effects as *Iron Man*, the pre-production process is hugely important. Jon Favreau's two greatest assets during *Iron Man*'s pre-production were his storyboard and pre-visual effects teams. The latter group is responsible for what is known in the industry as "pre-vis," an elaborate undertaking wherein 2D and 3D concepts are adapted into often fully realized animations of the complex action beats of a film. As the expense budgets of films like *Iron Man* climb through the stratosphere, pre-vis gives the director and producer a chance to "practice" tough shots and gain confidence on their way to principal photography.

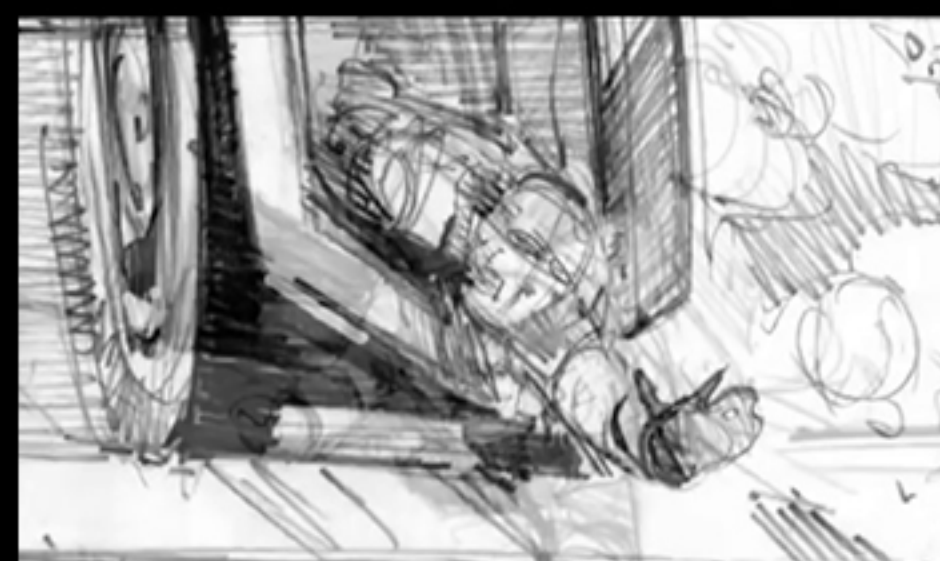


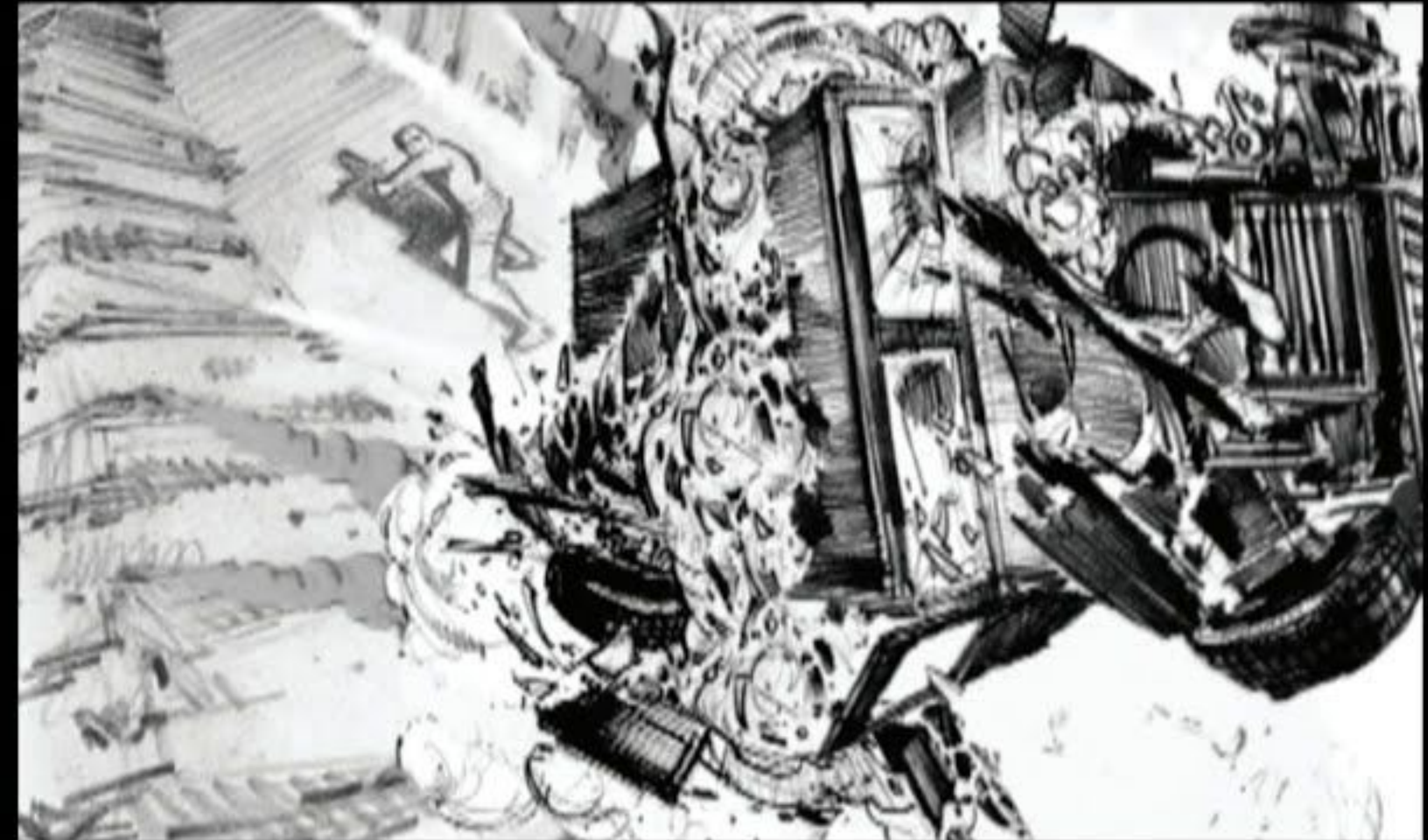
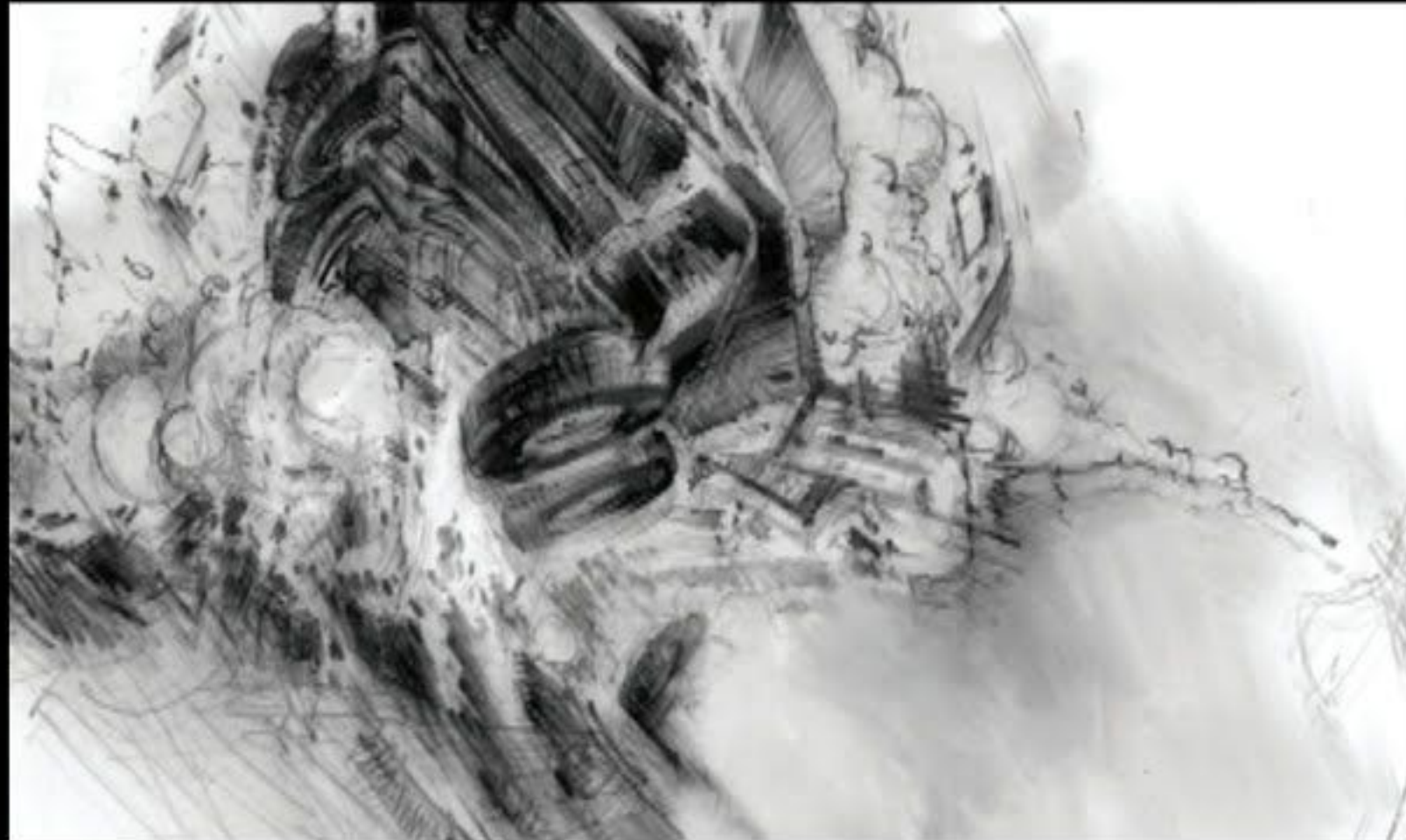
Above, right: Weapons test storyboards (Michael Jackson)

But the pre-production timeline starts with storyboards, the lifeblood of a film's creative process. And as *Iron Man*'s visual effects coordinator JOHN NELSON declared, *Iron Man* had the "New York Yankees of storyboard guys." Batting cleanup for this Murderer's Row of artists was DAVID LOWERY, who kept in close consultation with Nelson as they managed the visual look of *Iron Man*'s many story beats and expensive action shots.

Right, below: Convoy ambush storyboards (Rick Buoen)



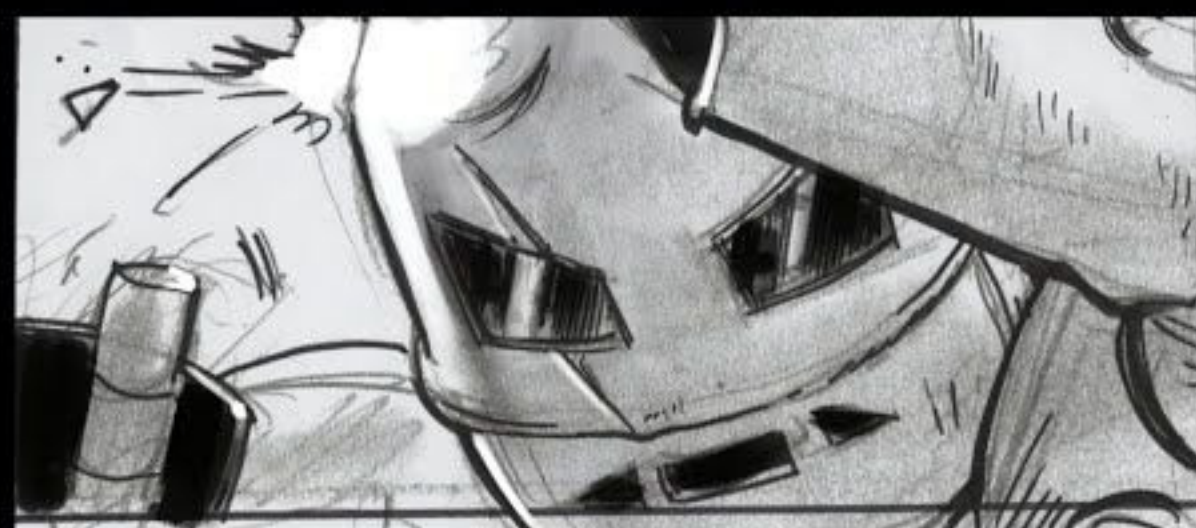
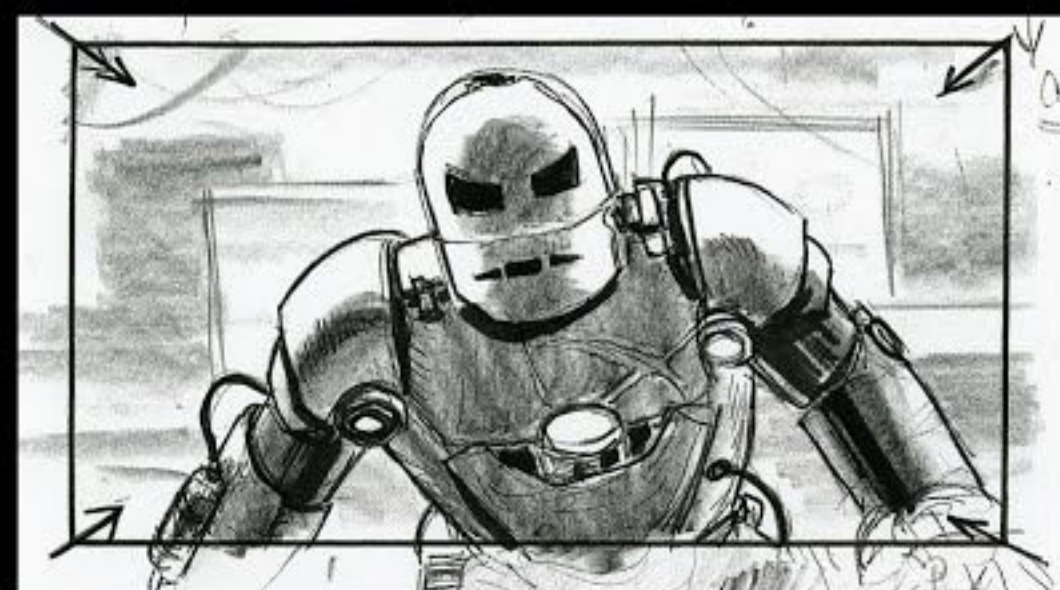
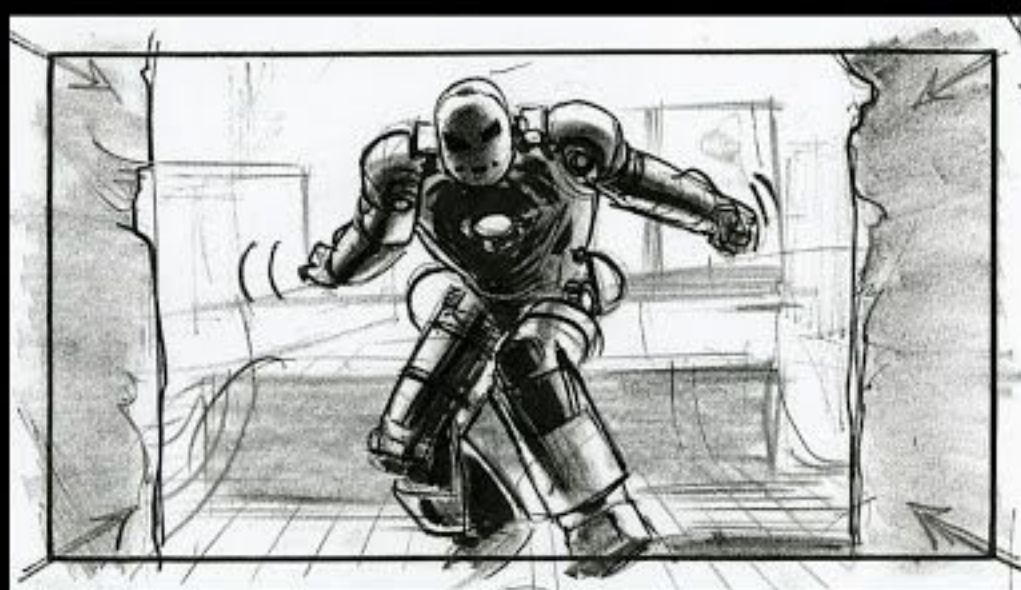
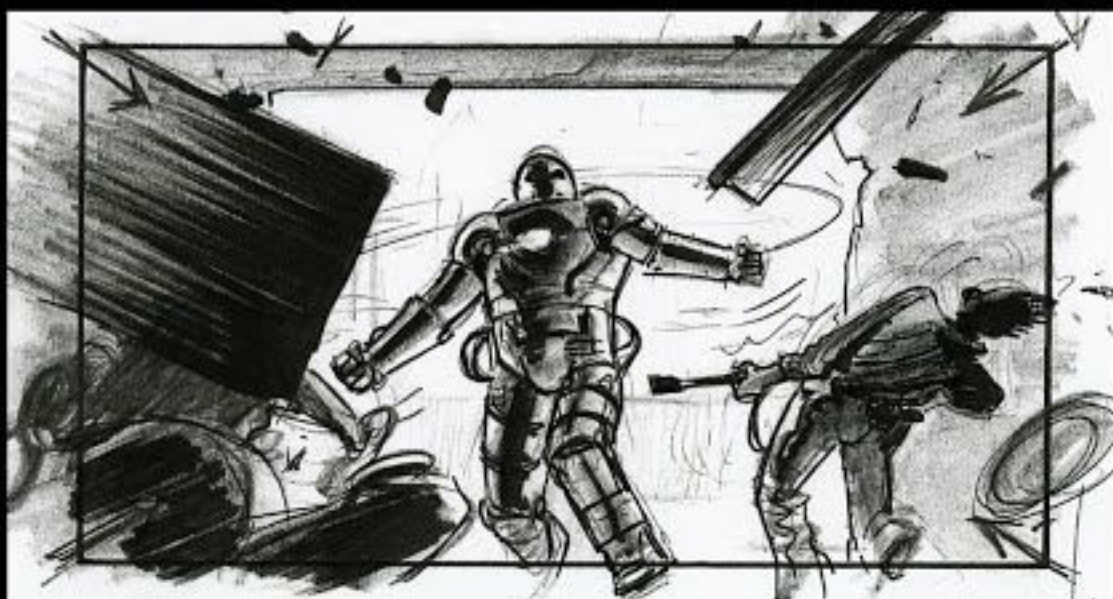






Page 142-143: Convoy ambush storyboards (Rick Buoen)







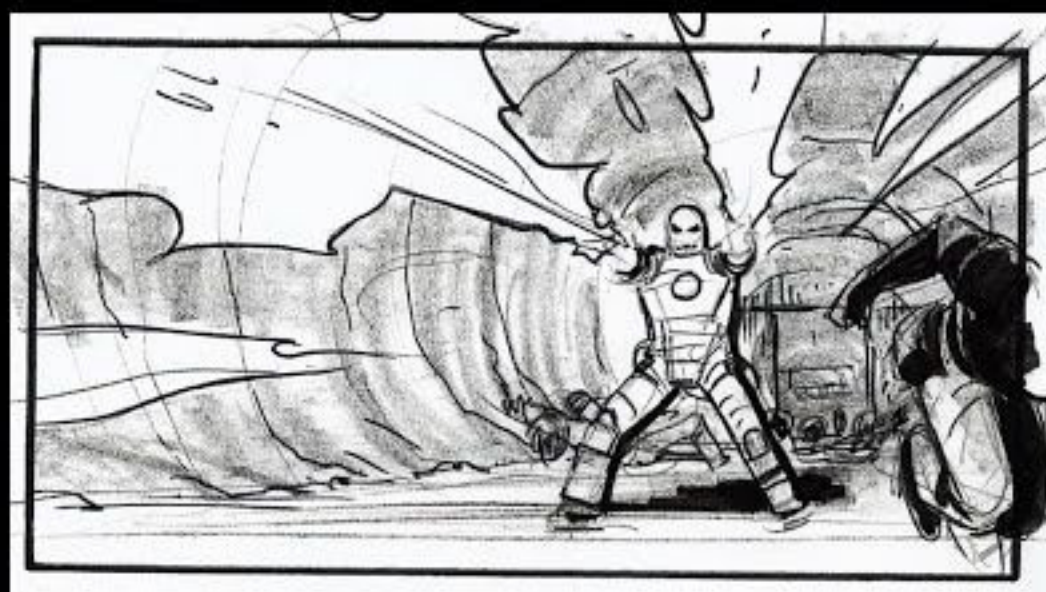
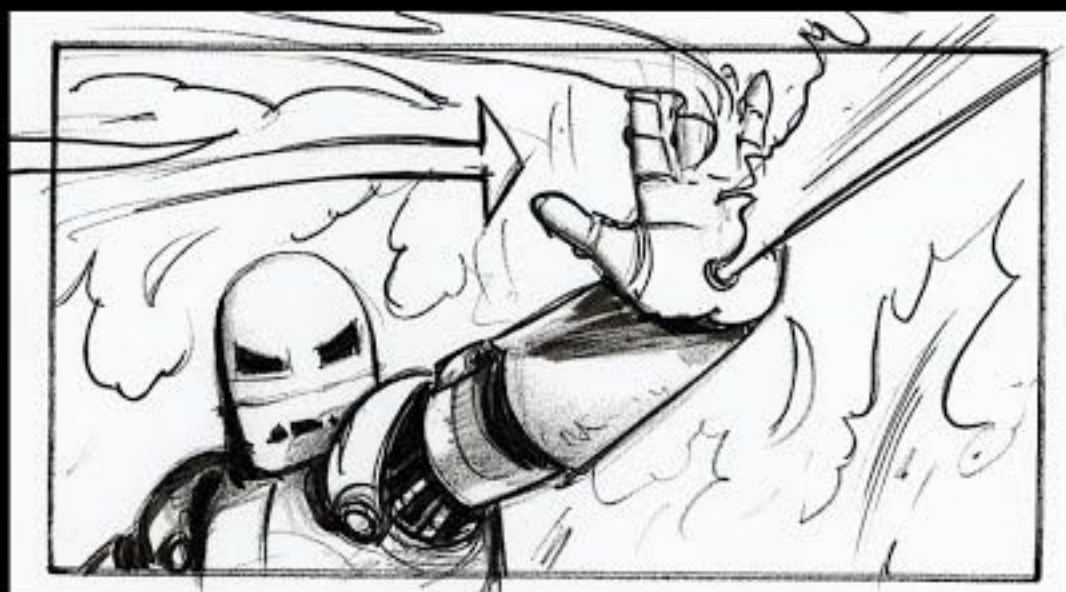
One of the film's most suspenseful moments occurs when Iron Man bursts through the thick metal door behind which Stark had been surreptitiously constructing the means of gaining his freedom. It's a dramatic moment that launches an even more dramatic escape sequence, and it has its genesis in Iron Man's classic comic-book origin tale.

LOWERY: "Comics got a lot of their design and layout perspective from film, especially in the decades since the '70s when film shooting became more stylized and artistic, and the equipment technology was really able to give you a more complex vocabulary of angles to choose from. But comics have always had a certain discipline to them related to their type of storytelling. In film, the storyboards are somewhat of a slave to the cinematography: It absolutely has to serve it. Though storyboards are panels on a page, just like comics, I can't afford to think of it in exactly the same way. I have to think of it as shots on a page."

Page 144-145: Cave escape storyboards (Eric Ramsey) and pre-vis animation (PLF)

Right: Mark I flamethrower sequence movie still

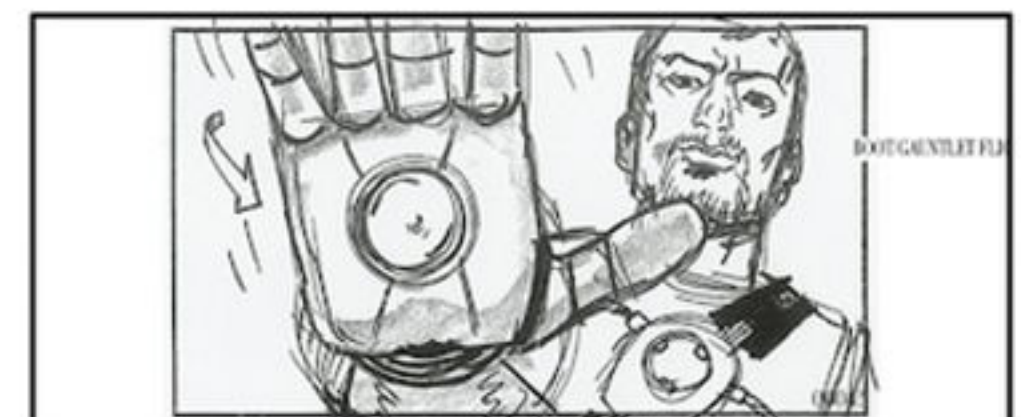
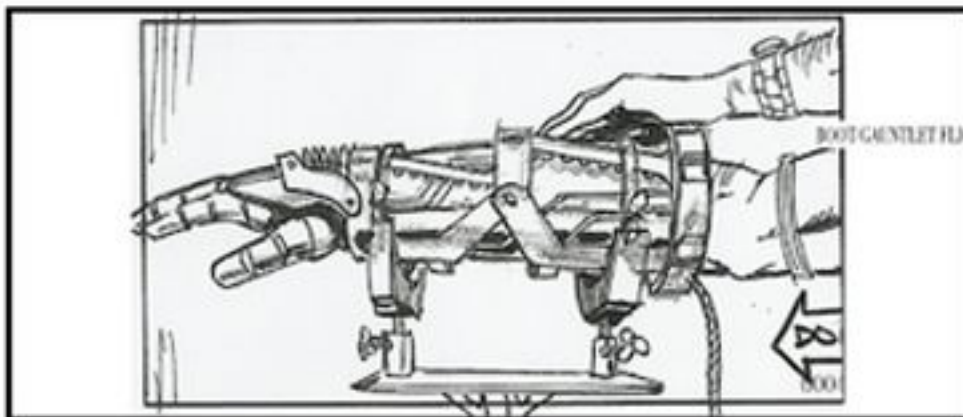




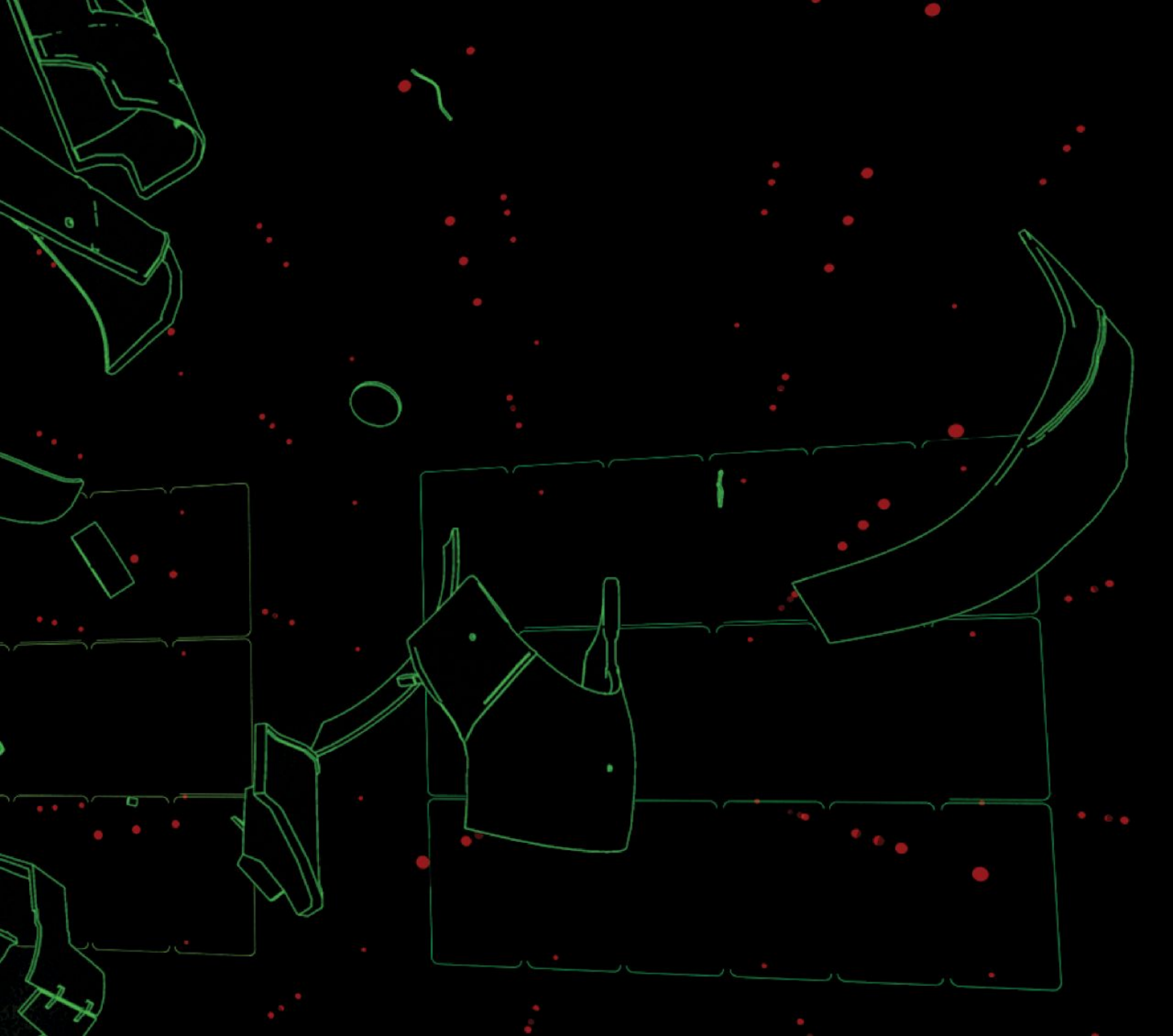
When Iron Man ignites an enormous inferno with the terrorists' weapons cache (movie still, above), it is a scene shot in a 3D world, full of all the movement that is possible in that reality. One of the greatest challenges an artist faces is reflecting that movement within the framework of a 2D storyboard. To better accomplish this task, storyboard art employs directional arrows that indicate either camera

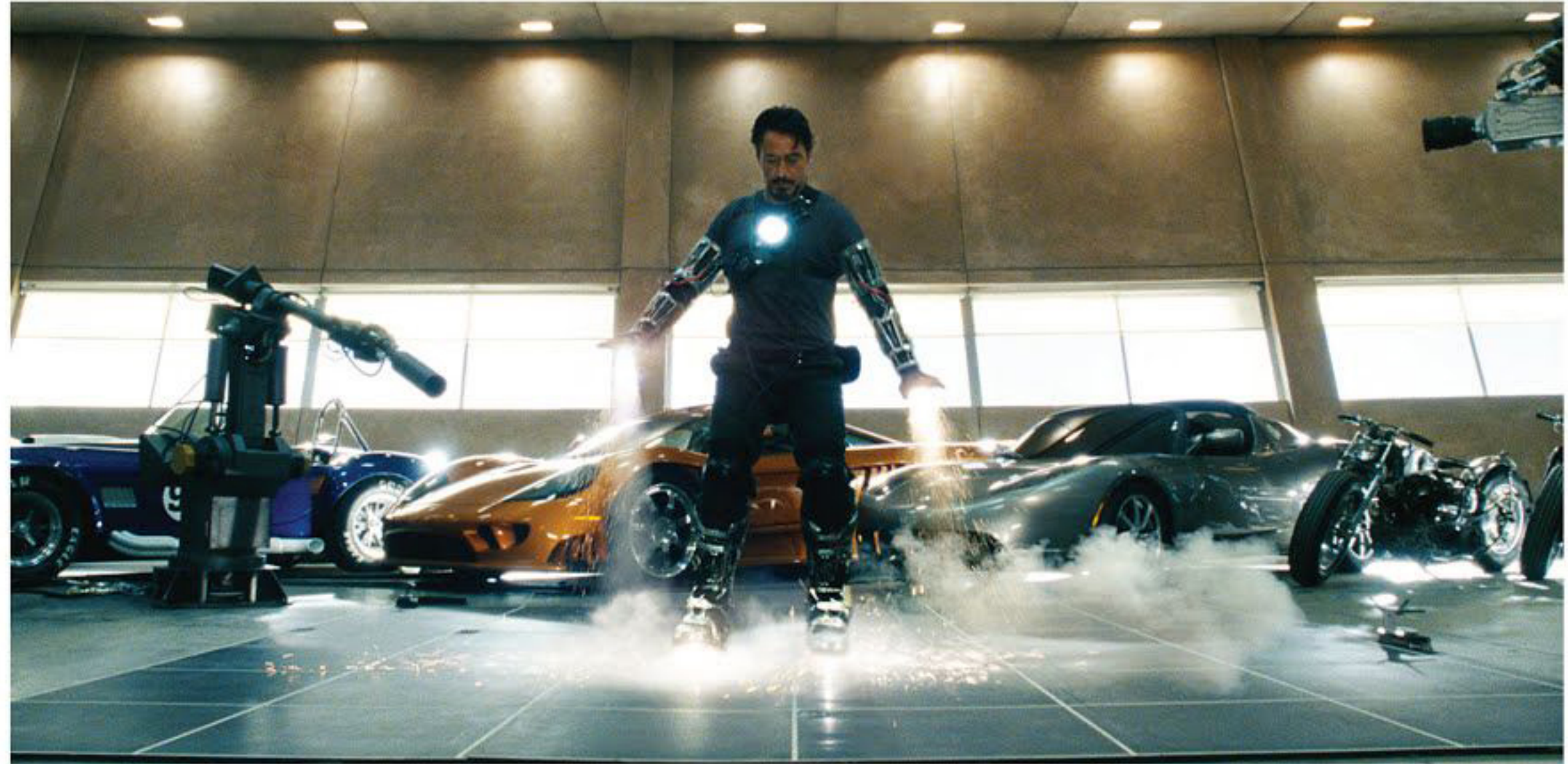
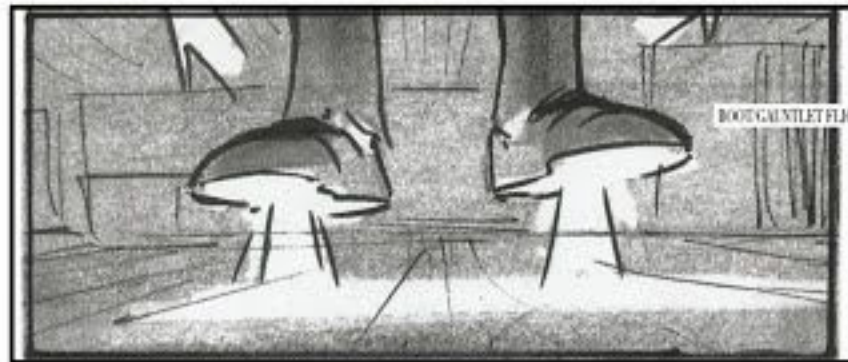
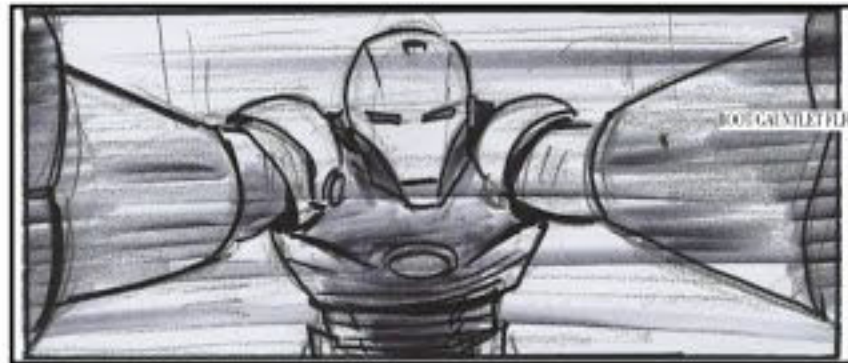
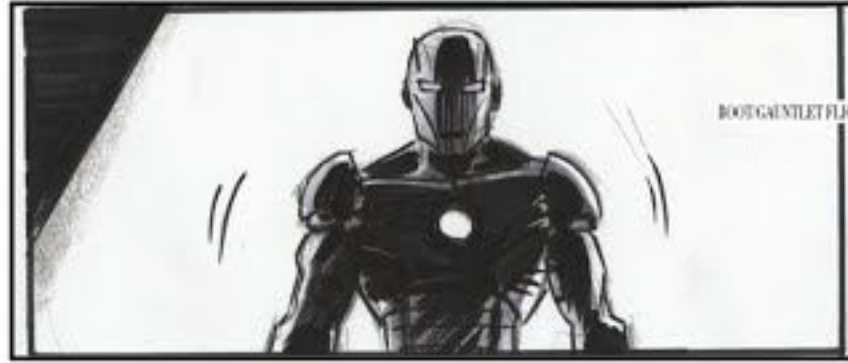
movement or the movement of the object that is the focus of the storyboard frame. In the first frame, an arrow completely enclosed within the panel indicates the movement of Iron Man's flamethrower arm sweeping across the shot.

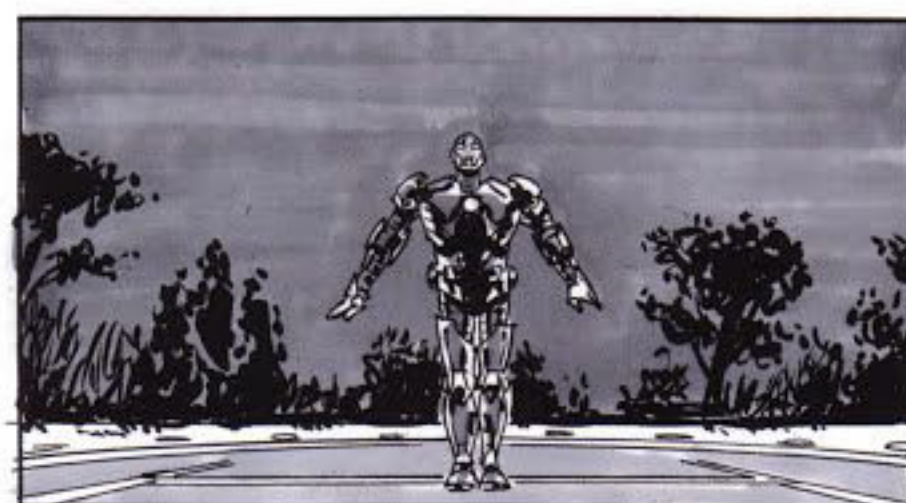
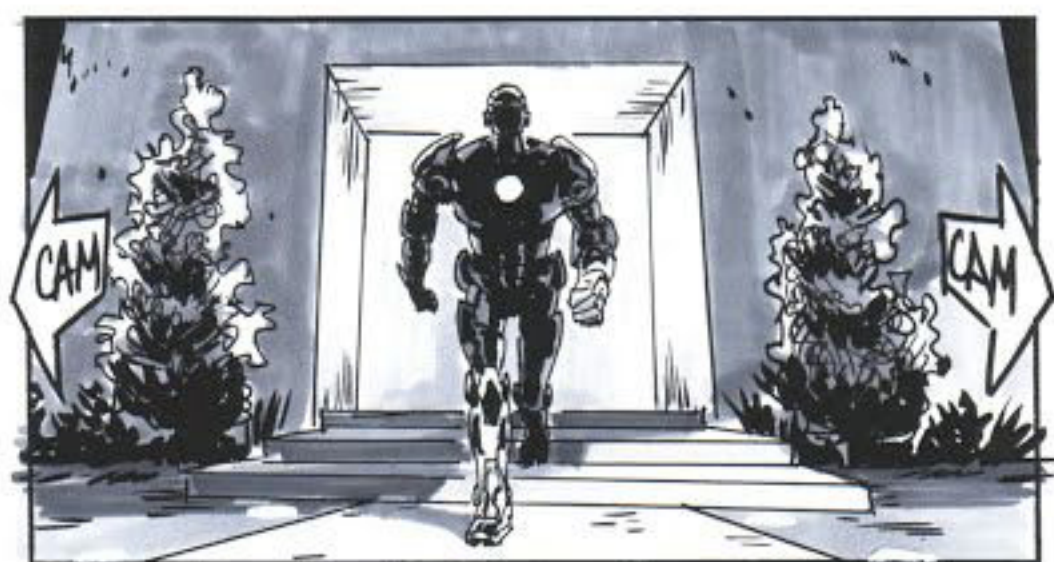
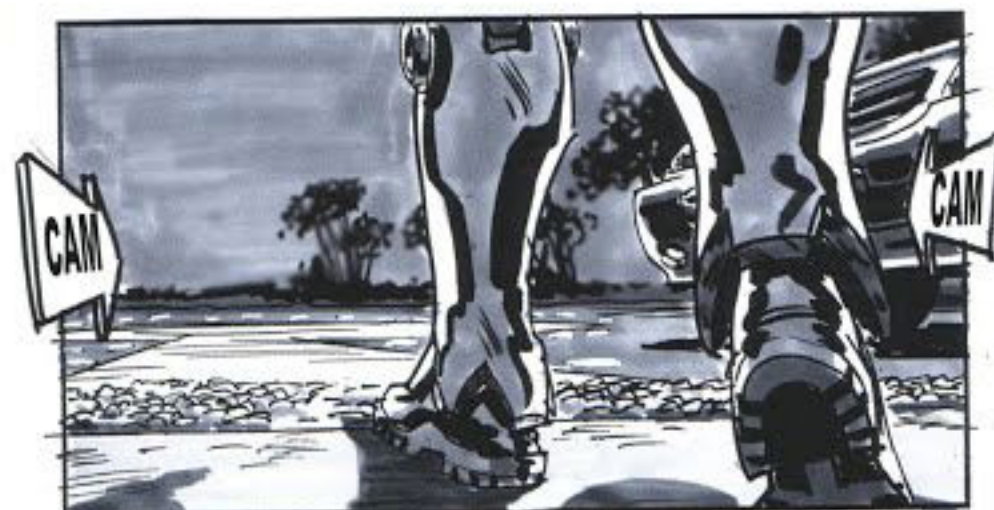
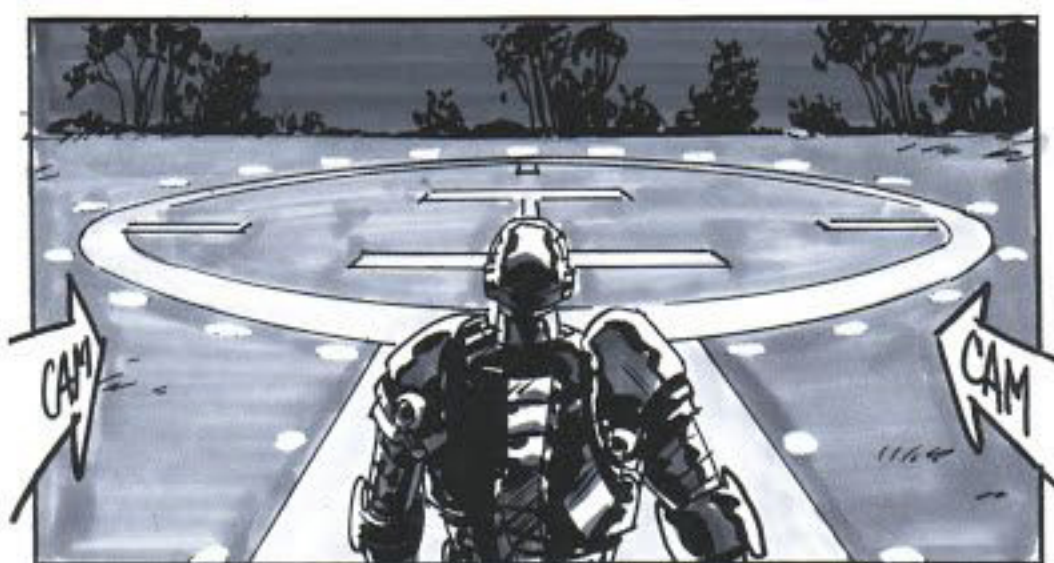
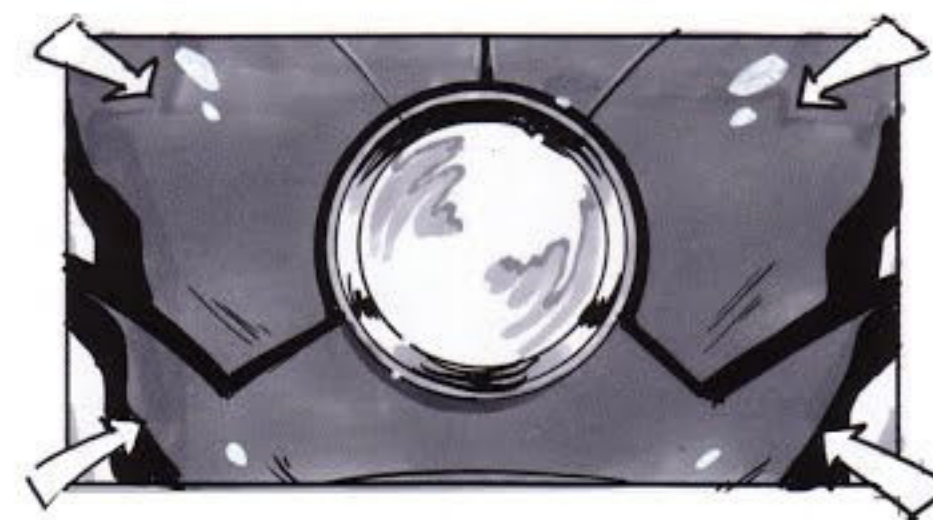
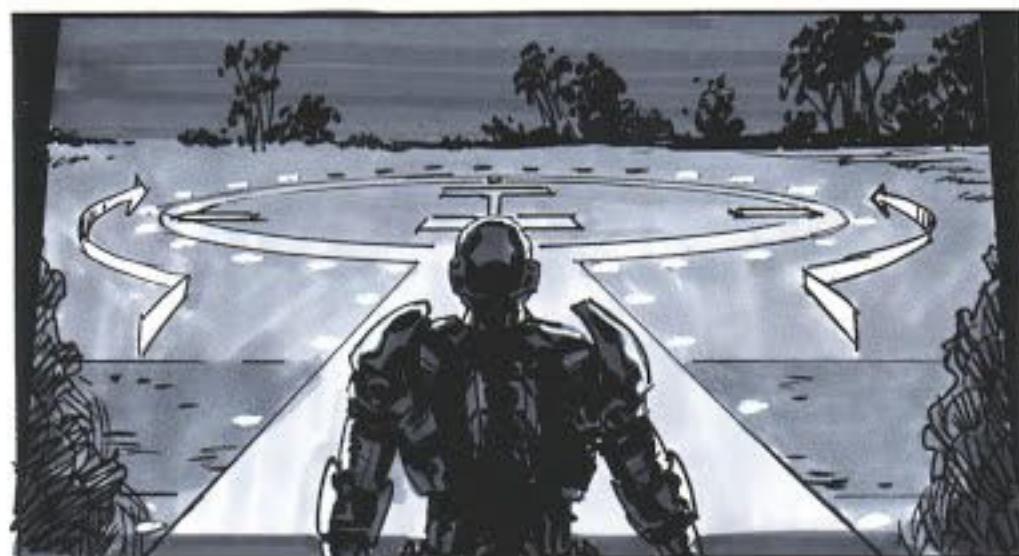
Top row: Cave escape storyboards (Eric Ramsey) and pre-vis animation (PLF)

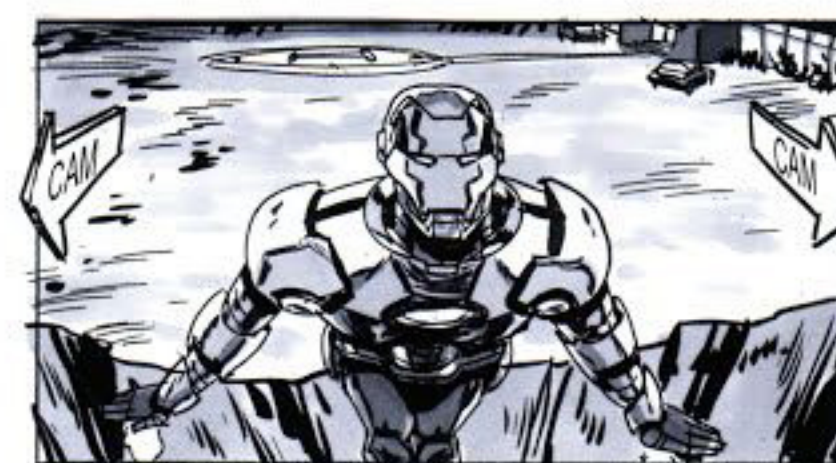
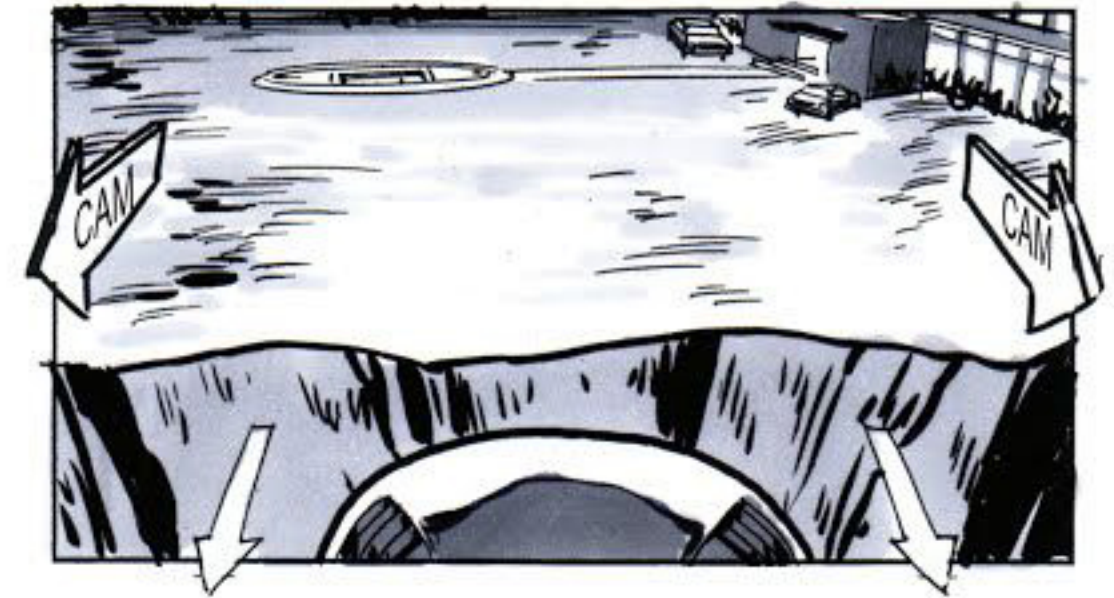
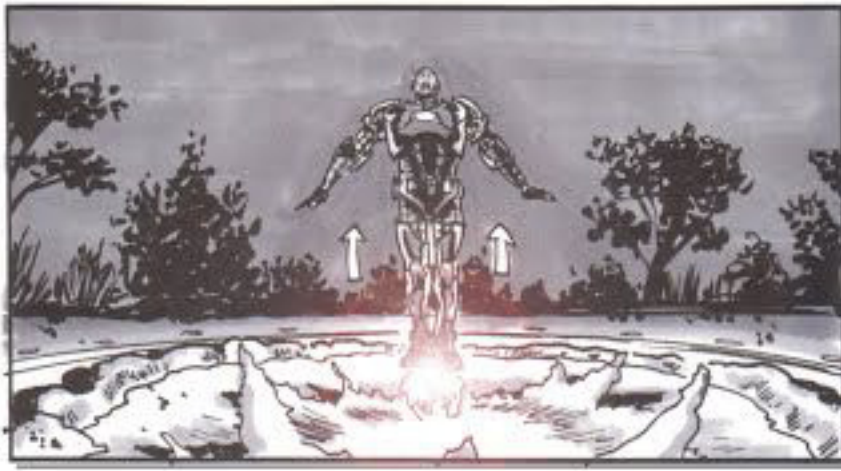


Unlike arrows that are completely enclosed within a frame, directional arrows that straddle the outer edges of a frame indicate movement of the camera's point of view. In the top center panel on this page, the arrows that are attached to the frame indicate the camera is to pull back on the action in the shot, which showcases a waist high shot of Stark testing his armor's hand gauntlet.



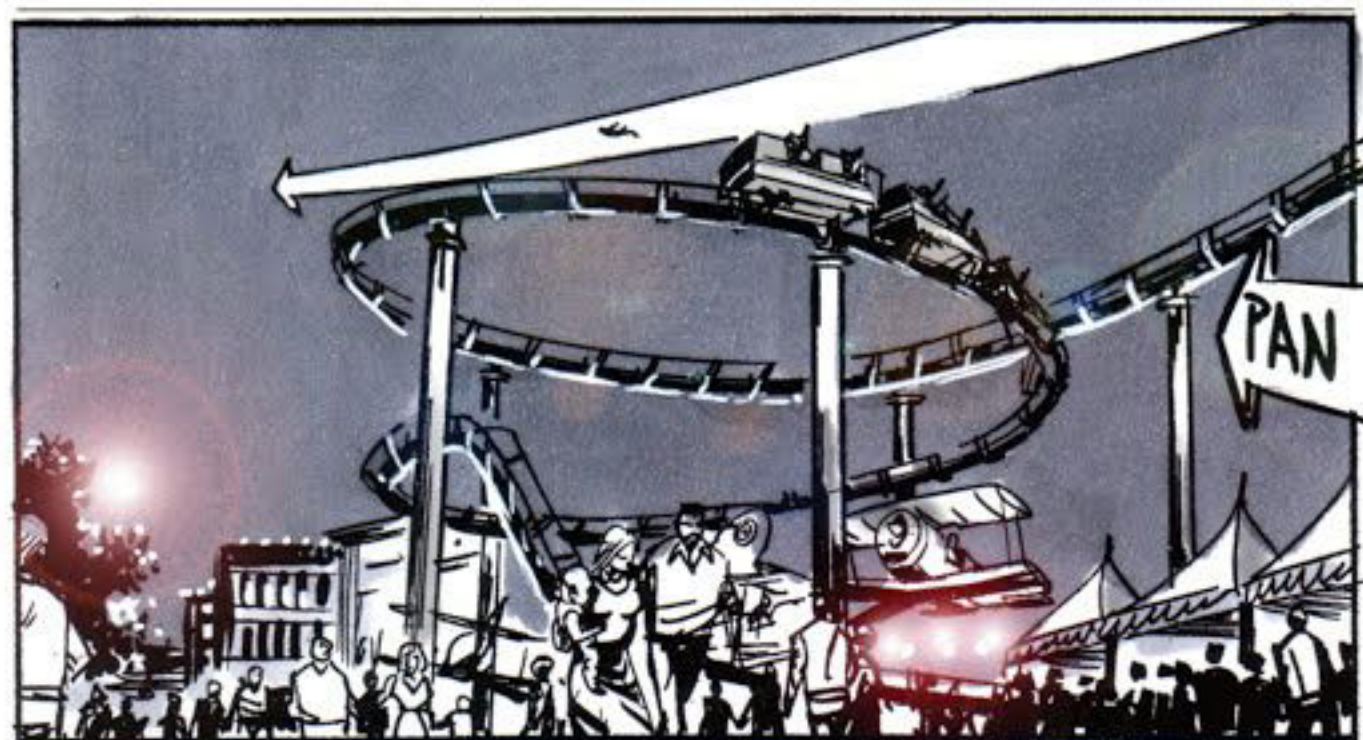
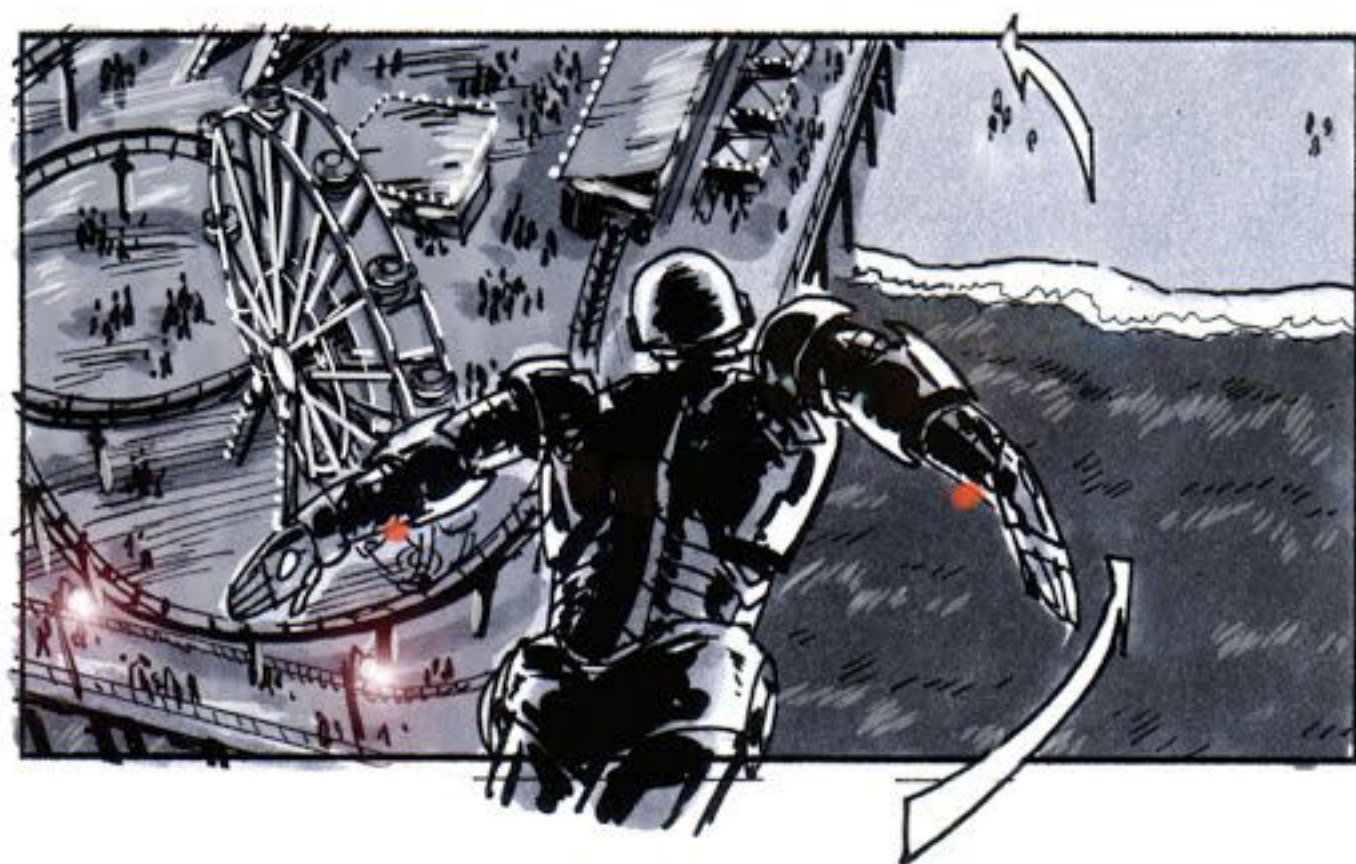
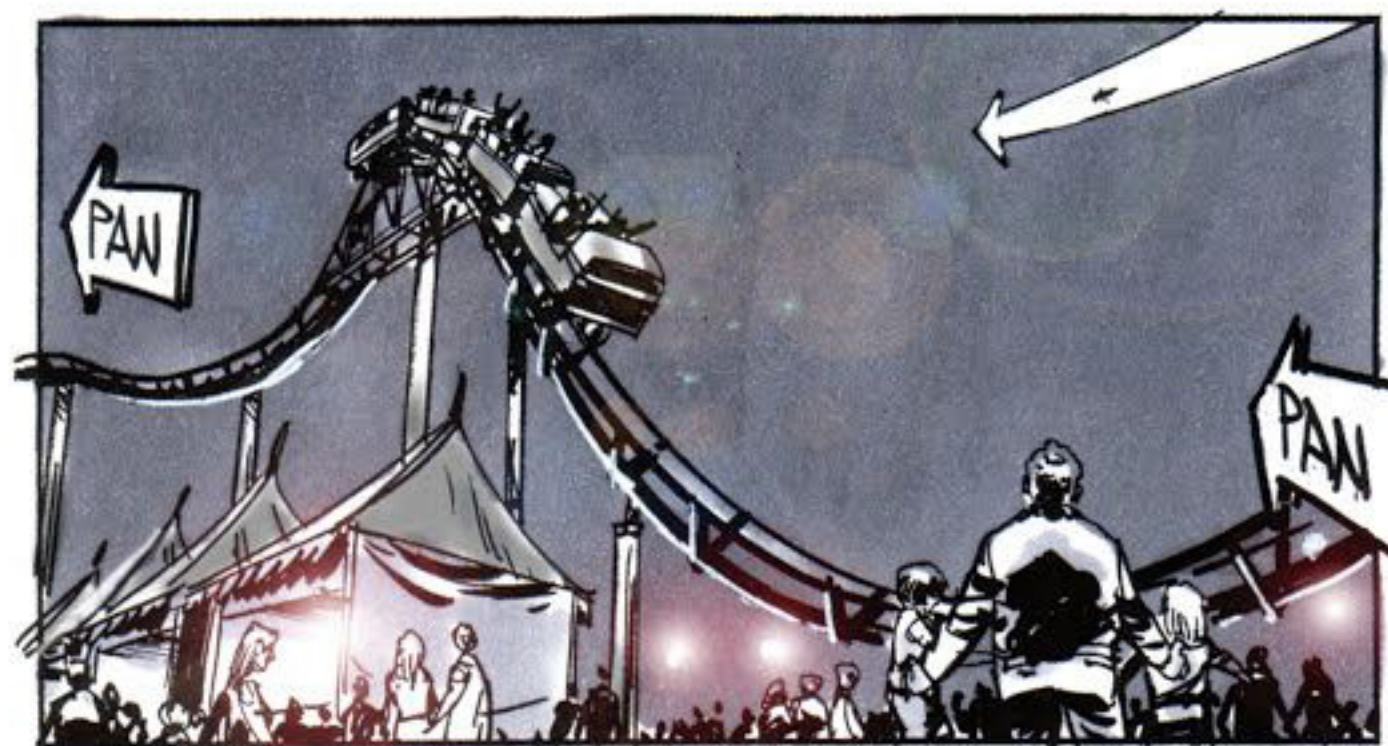


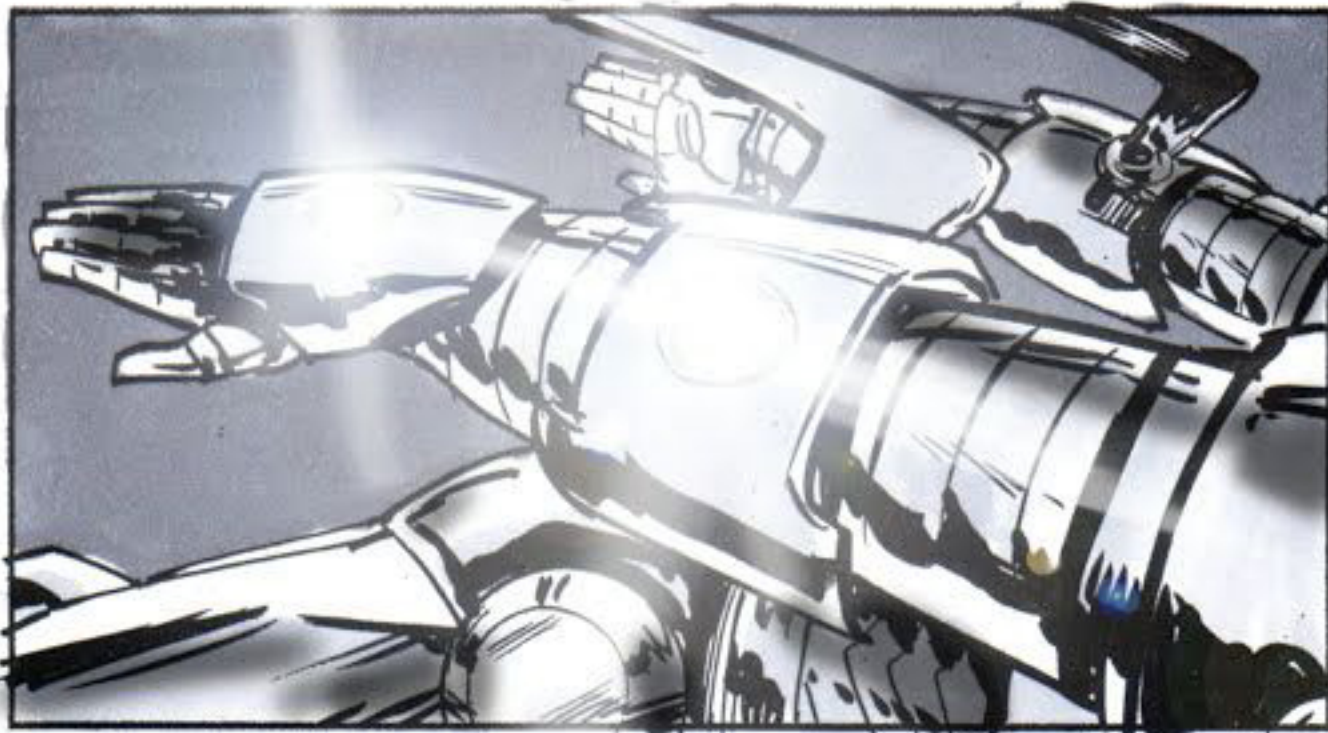
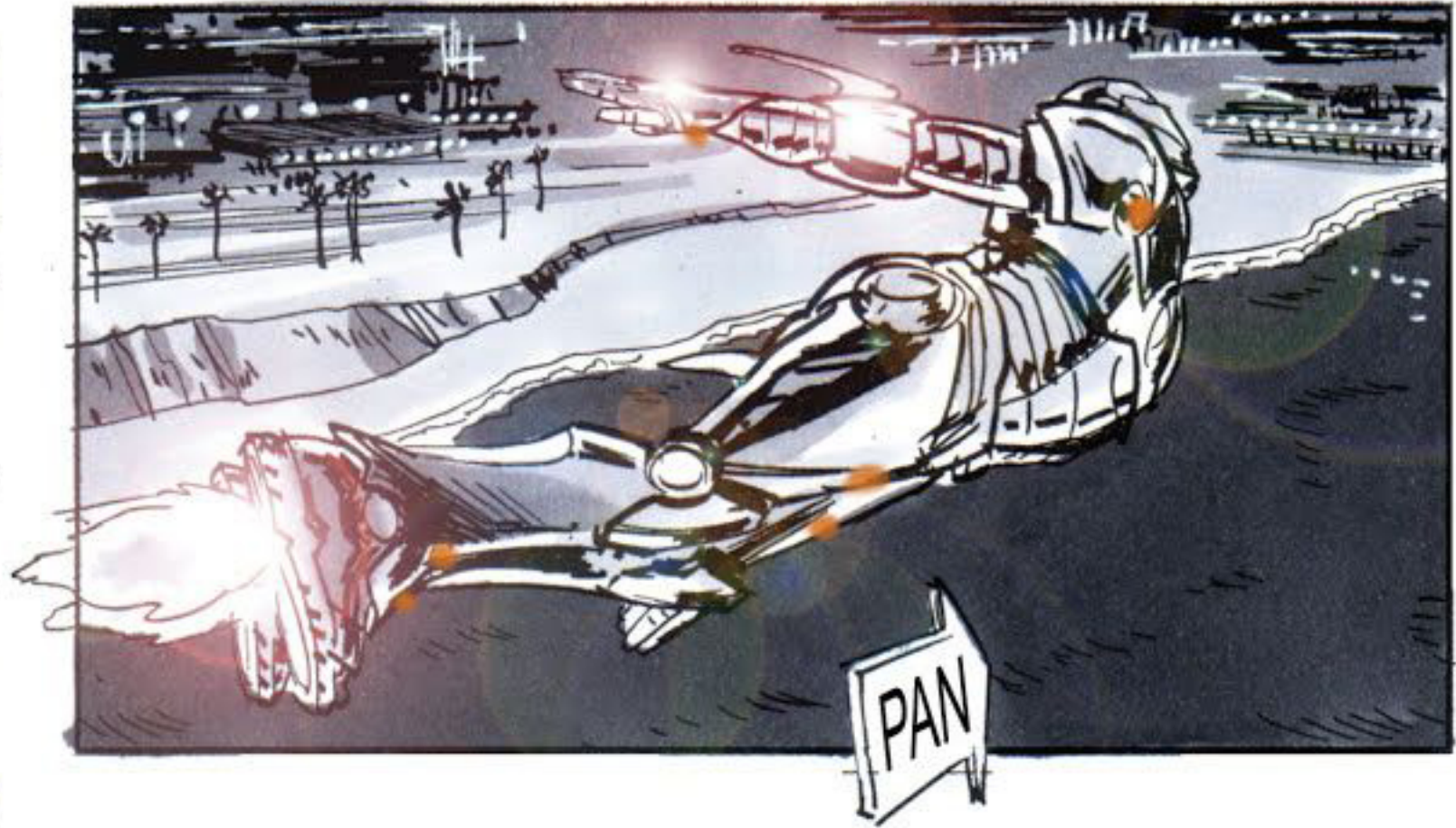




Page 150-151: First Flight storyboards (Phil Keller)

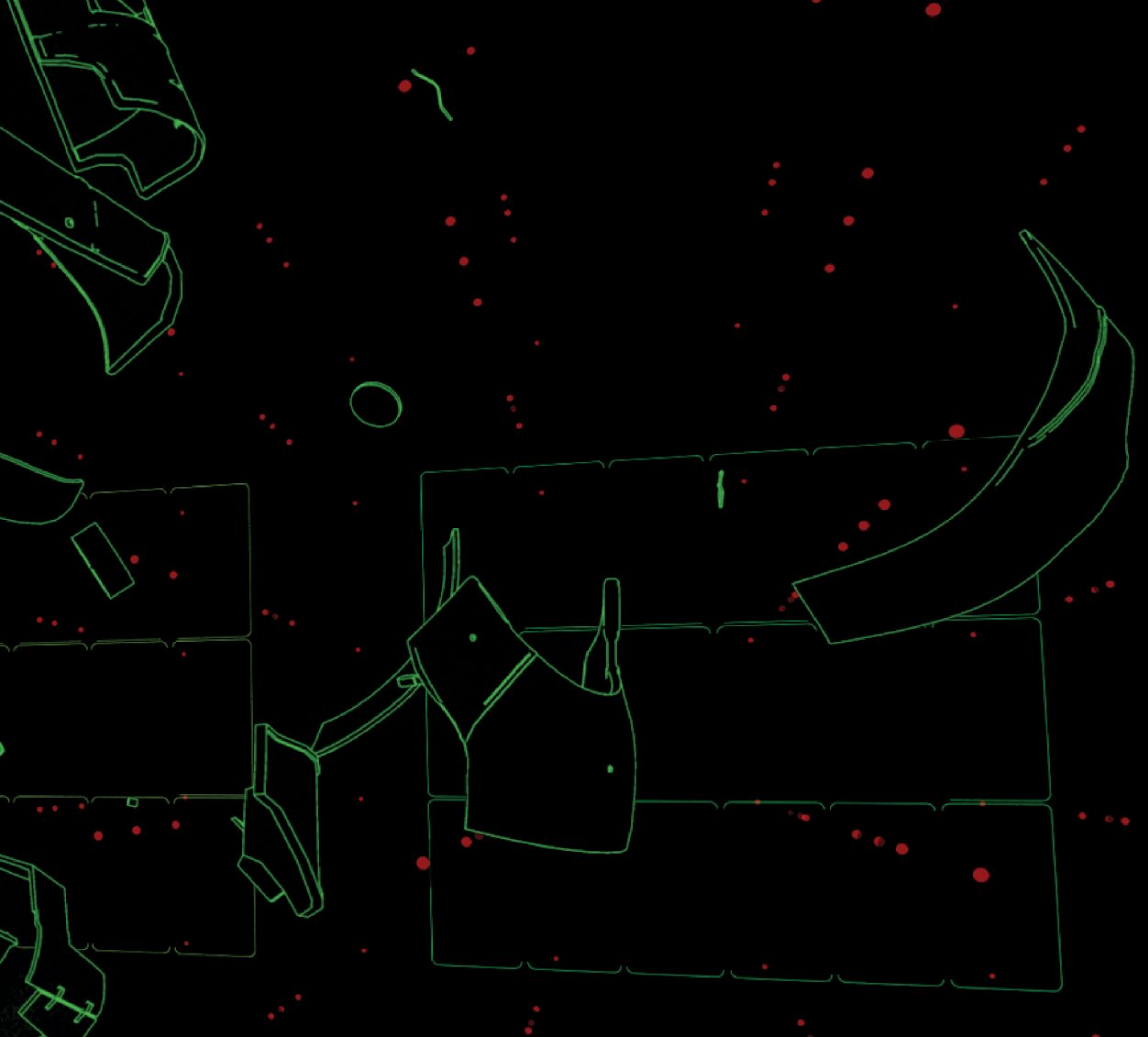
After the small step of his boot-thrusting test, Iron Man was ready for the giant leap of his armor's maiden voyage. This storyboard sequence, which is to be read from top to bottom across the page, was anointed as "First Flight."



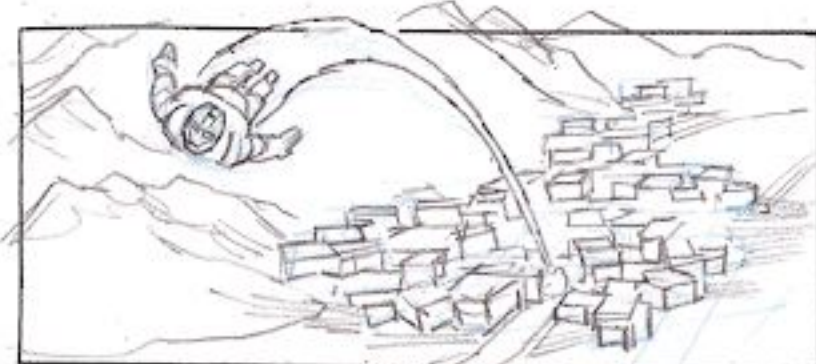
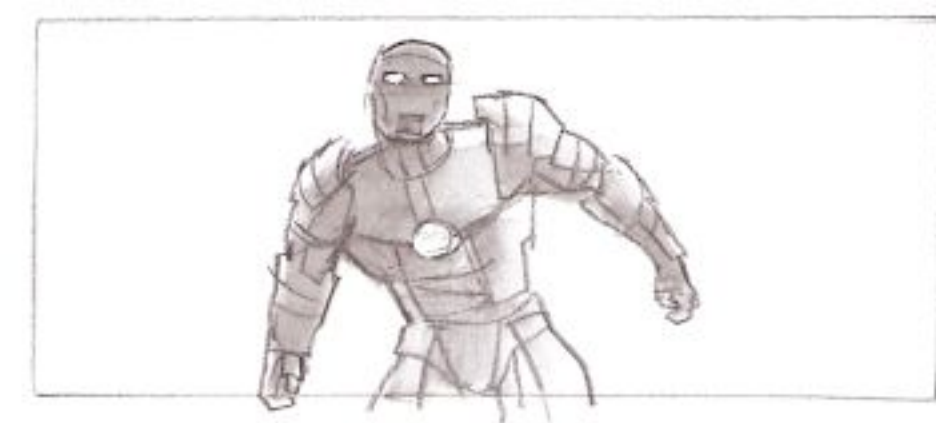


Page 152-153: First Flight storyboards (Phil Keller)

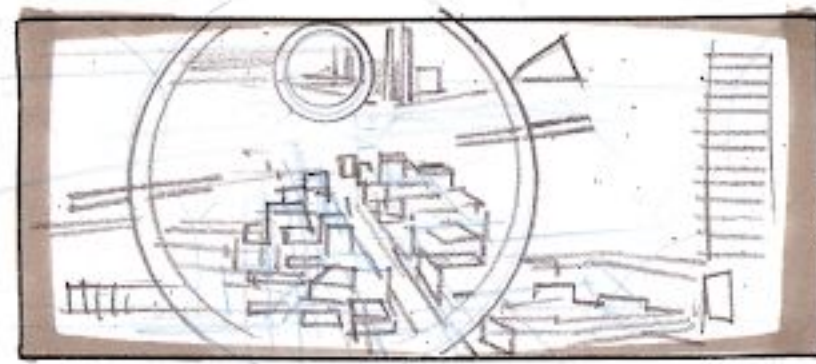
Storyboard artist PHIL KELLER includes directional arrows that clearly indicate his desire for the camera to pan in a variety of different angles and pitches. As this sequence tracks Iron Man's flight across the night sky, the subtle touches in Keller's storytelling can be noticed. The first frame of the sequence highlights a man holding a fishing pole in the foreground. As the next frame switches focus on Iron Man, streaking high up in the sky of the shot's background, the fishing pole is still visible, giving the audience a continuity of perspective.



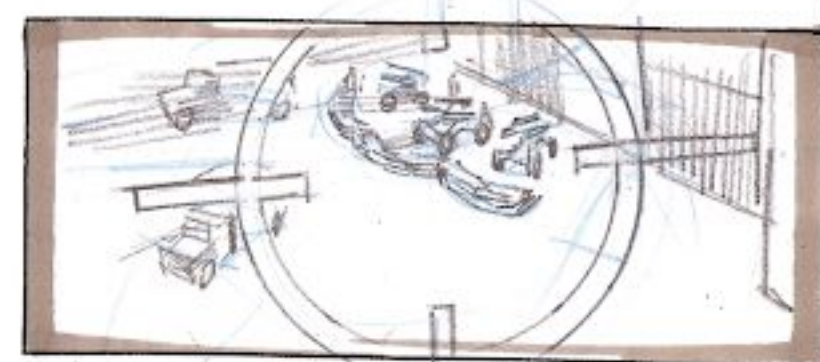




IM leaves village - heading for 'Jericho's'



IM POV - 'power of 10' zoom



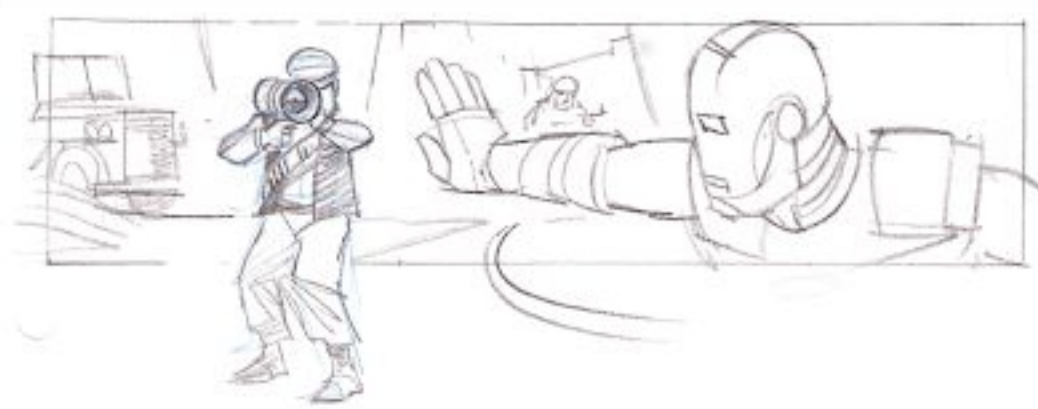
Jarvis: 'Jericho's targeted in'



POV cont'd 'FLAK burst!'



White-out! - INTO ORPHANAGE



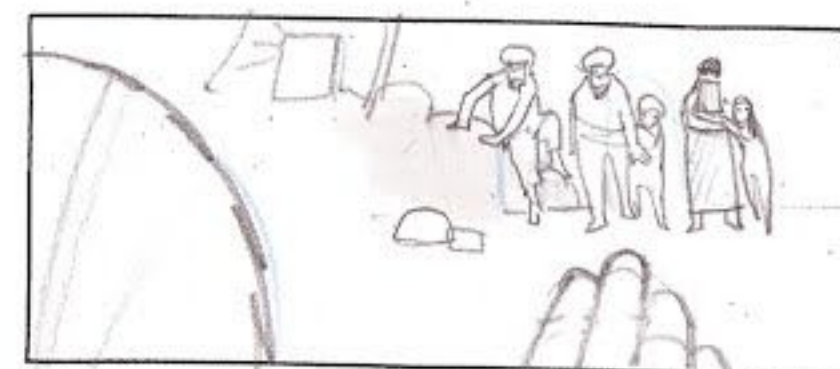
Page 156-157: Gulmira storyboards (David Lowery)

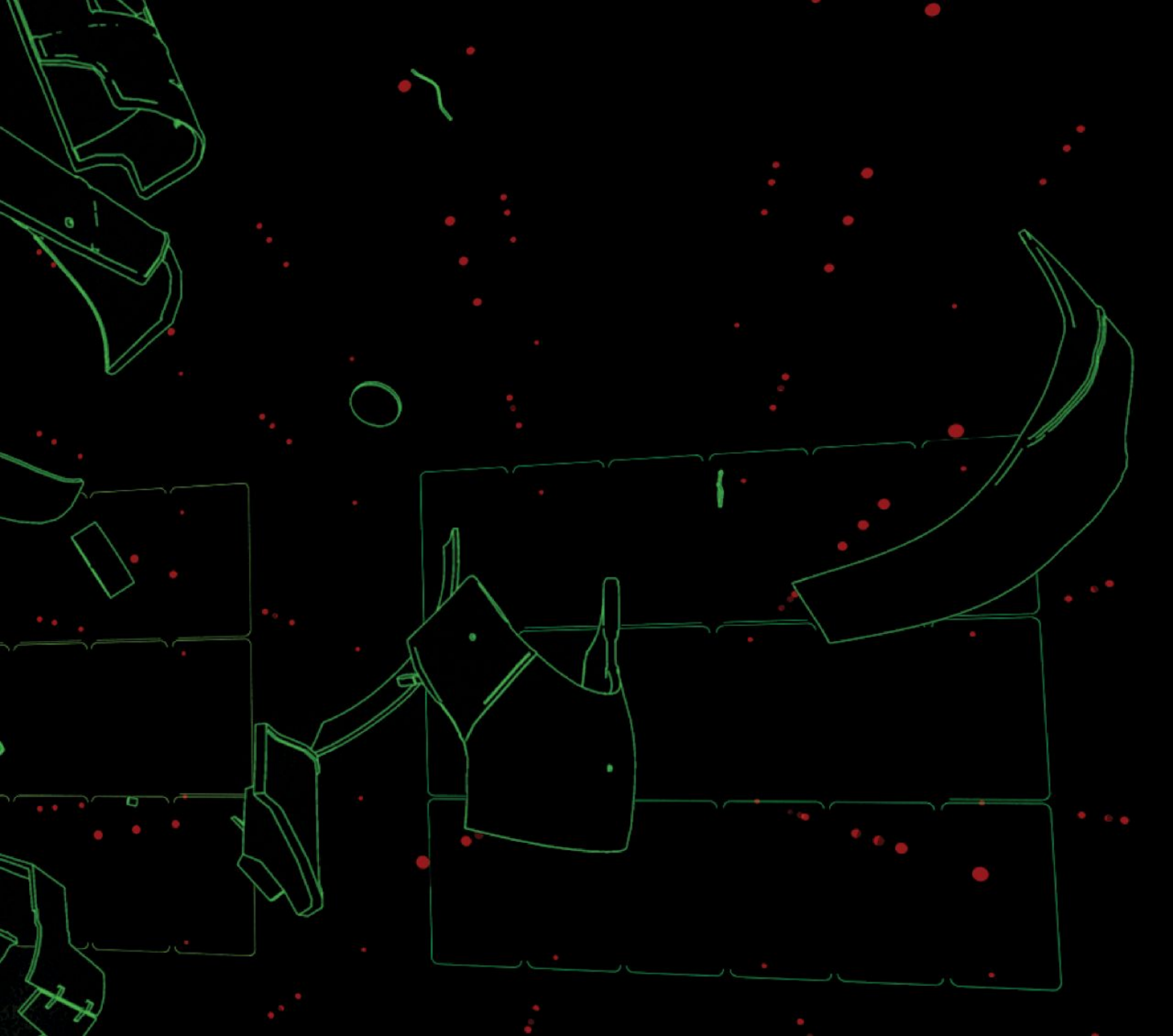
The war-torn outpost of Gulmira provided Iron Man with his first chance to use his armor's awesomely tricked-out weaponry against terrorist thugs who sorely deserved it! Lowery's storyboards for this scene include notes scribbled across the bottom edge to clarify the action. One note makes reference to The Orphanage, the design house that worked on the Gulmira shot.

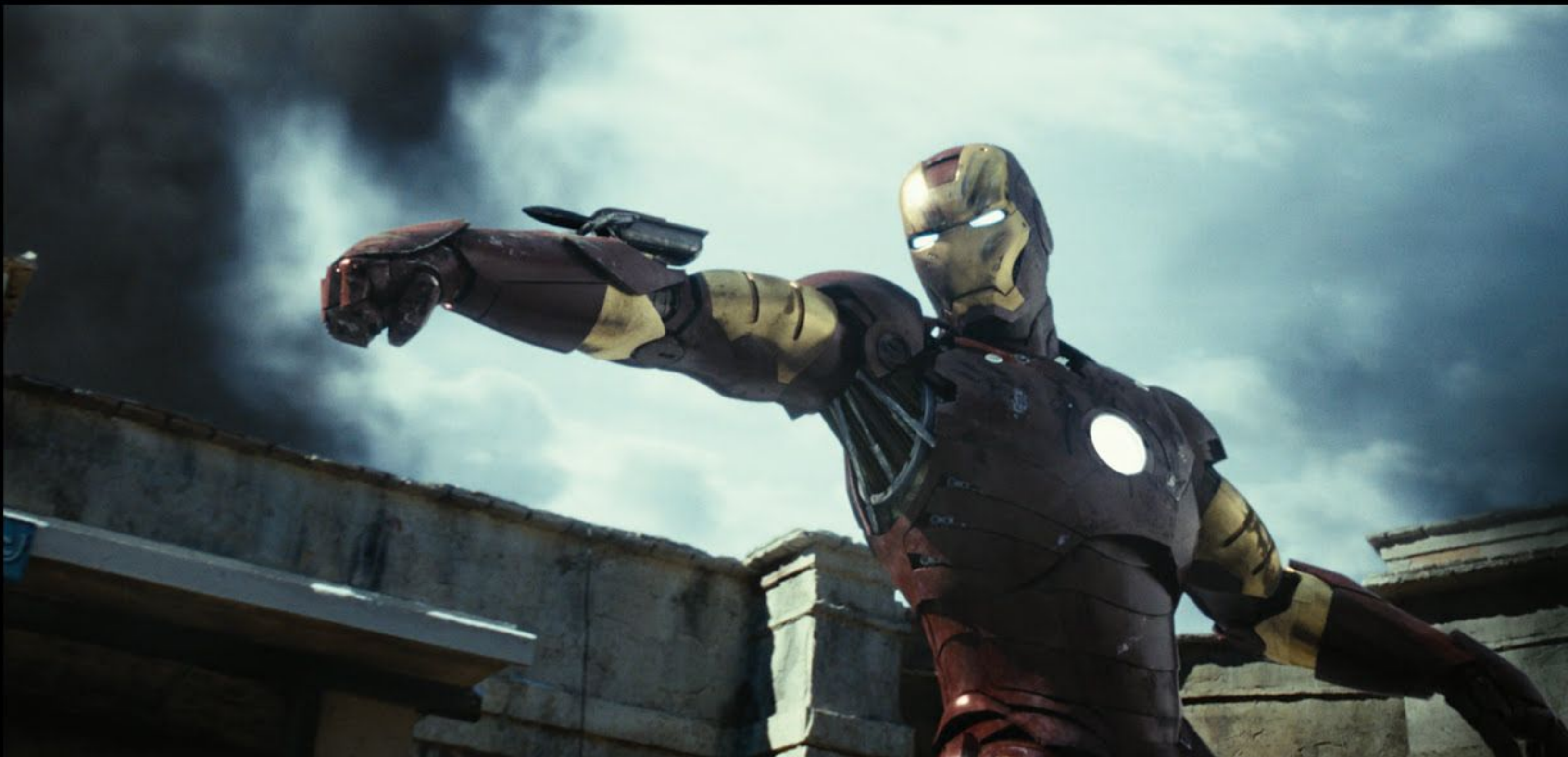


When crafting his storyboards for this scene, Lowery relied on previous story beats to influence the tone and posture taken by Iron Man.

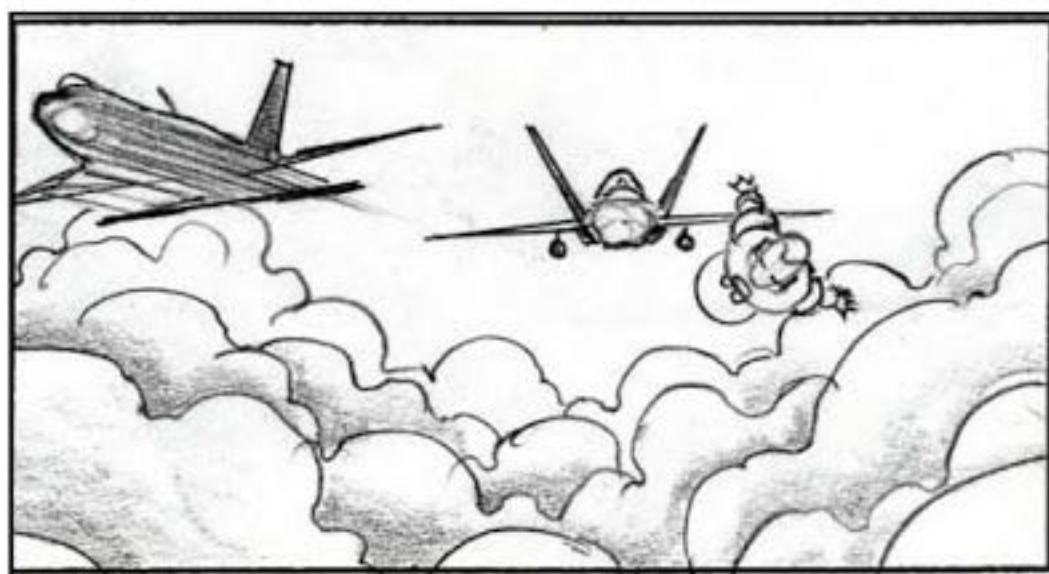
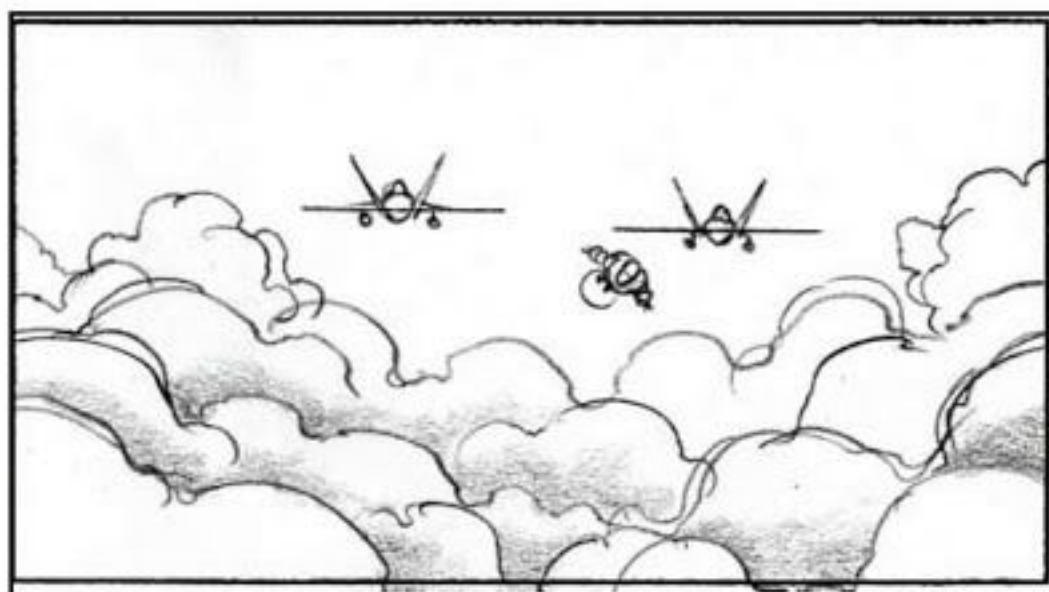
LOWERY: "Iron Man goes to Gulmira after seeing the news bulletins about the hell being wrought with his usurped weaponry. He goes there to right that wrong, so we drew it with this sort of 'maximum gunslinger' approach. We really did shoot this as we had first envisioned, although with a little tightening of the scene after watching it go through pre-vis."







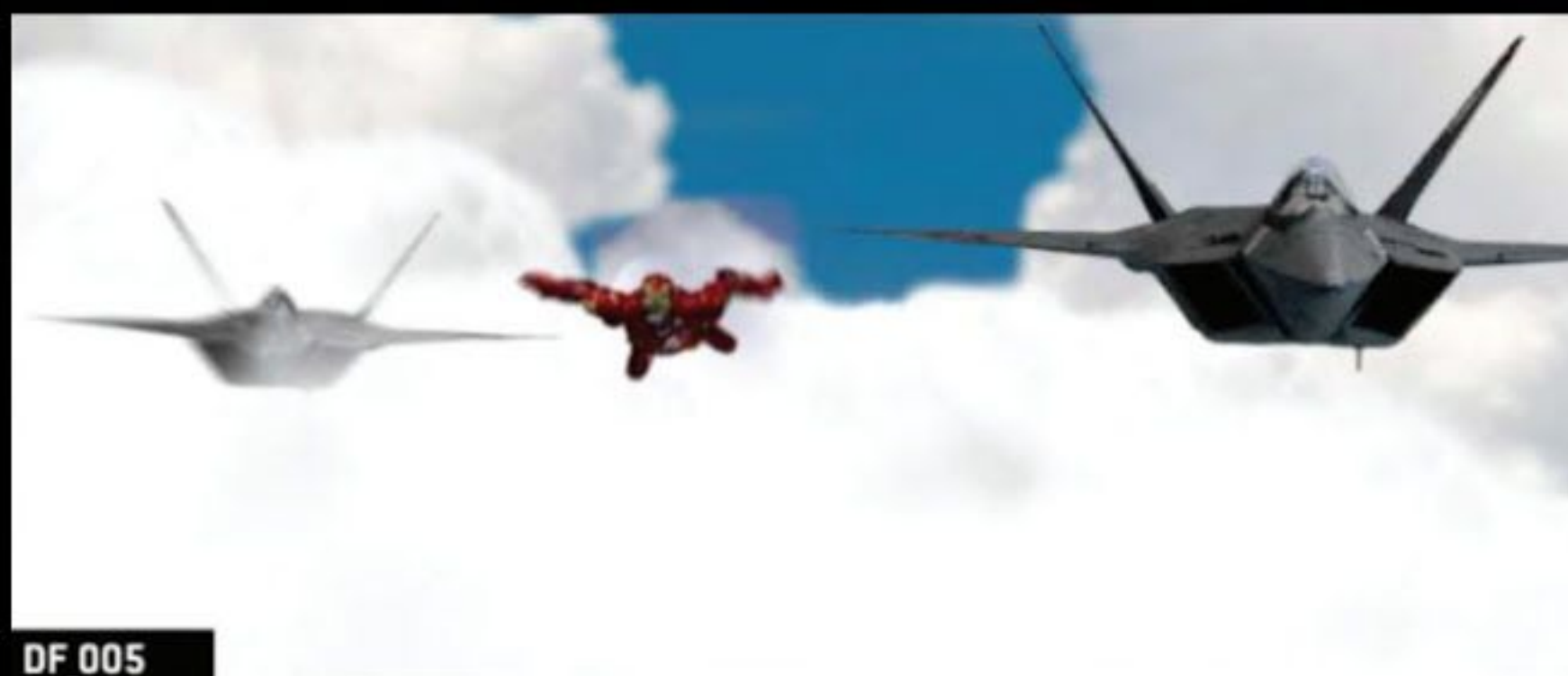
NELSON: "Some of the shots I'm most proud of are the close-ups of the CG characters in Gulmira (page 158, bottom; above). People ask, 'Are those CG? Or are they real?' We broke through a new dimension with those shots. We shot those plates with a stunt man in a mocap (motion capture) suit, miming all the physical movements. When he crawls out of the hole, you can see the dirt coming off of his hand. We added smoke and snow through the CG, clouds and structural backgrounds. And Iron Man is all CG. But it all started with practical shots, which serves to legitimize the visual effects. It makes the CG augmentation real, too."



Nelson continued to preside over translating storyboards to pre-vis throughout the filming of *Iron Man*. Comparing the storyboards of *Iron Man*'s dogfight with a pair of F-22s (page 160-161, sidebar images) with their pre-vis plates (page 160-161, interior images) gives a keen insight into the process.



DF_005



DF_005



DF_0230



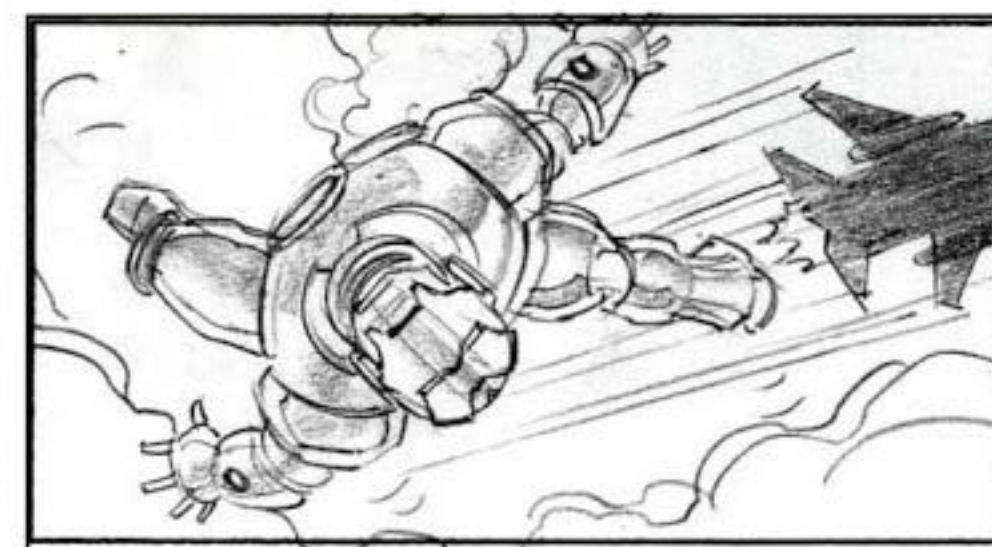
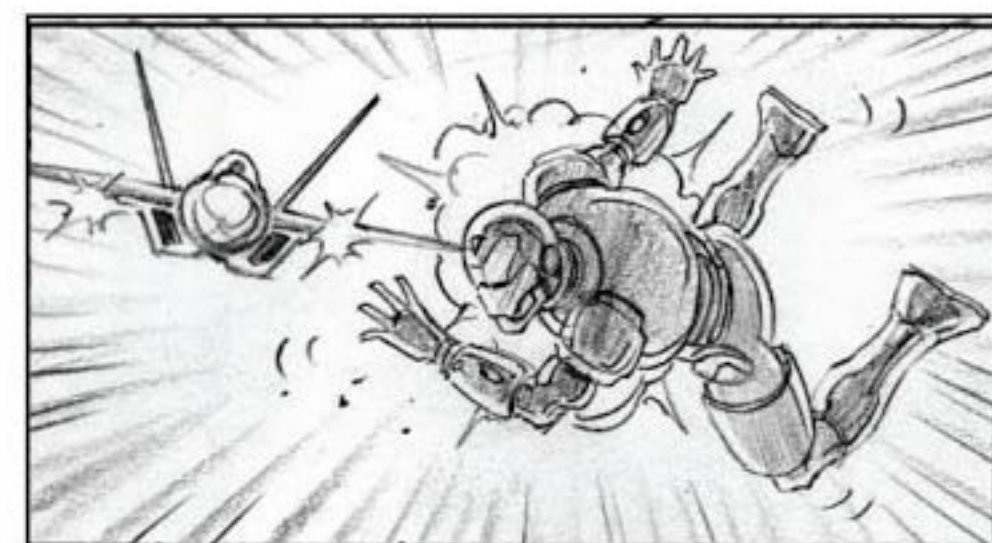
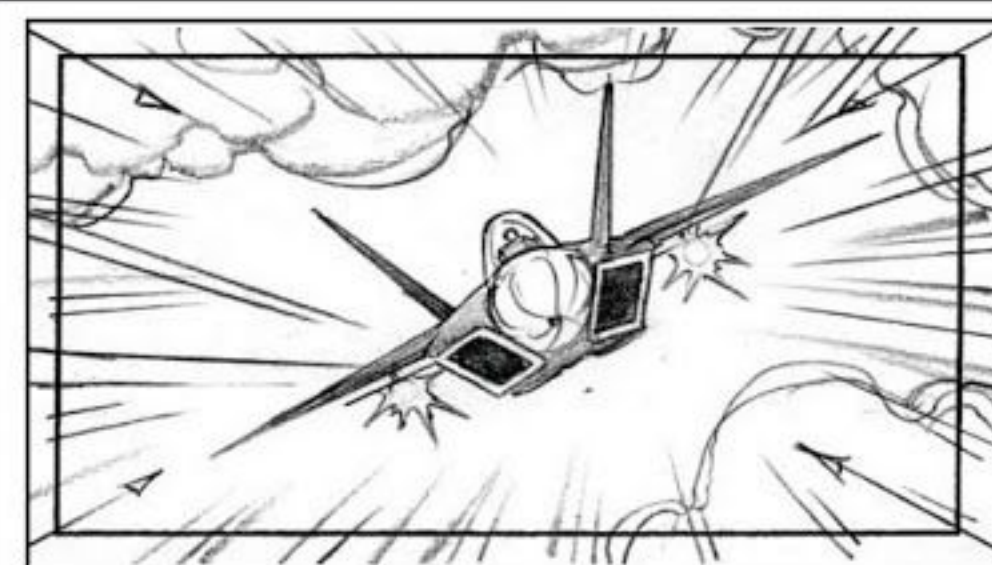
DF_275



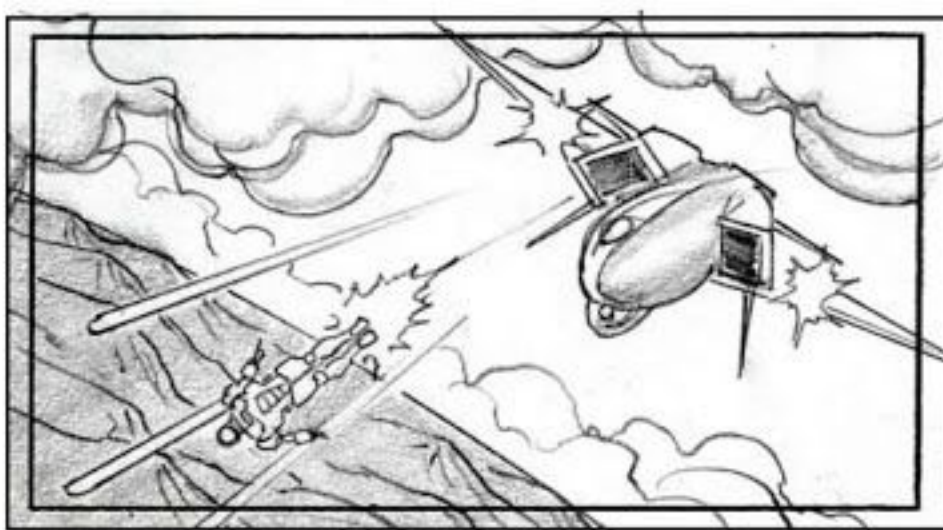
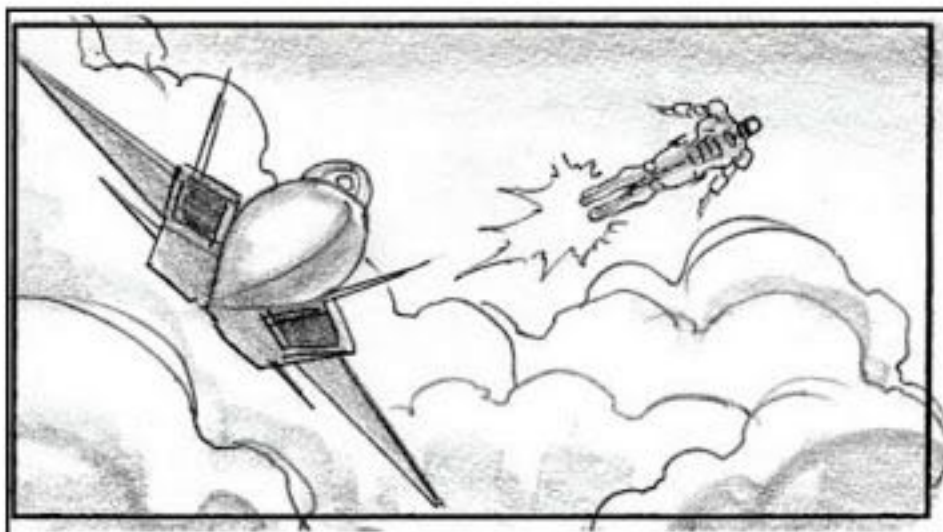
DF_275



DF_275



The dogfight scene puts Iron Man in the middle of a bunch of high-concept effects scenarios: breaking the sound barrier, deploying chaff to evade incoming missiles, taking fire from fifty-caliber machine guns, colliding with the wing of an F-22 and rescuing a pilot whose chute won't open. If you think Iron Man had his hands full, try being John Nelson.



DF_062



DF_062



DF_062

Above: Dogfight storyboards (Michael Jackson)

Right, page 163-165: Movie stills, pre-vis plates

NELSON: "This was a big-deal sequence for us. It was heavily pre-vised. Some would approach a sequence like this by doing everything in the computer, but we didn't want to do that. We wanted it to feel more like *Top Gun*, where it's all on camera."



DF_101



DF_101



DF_102

Initial discussions with the Department of Defense to rent actual F-22s got under way, but what with a war going on, DoD concerns about how close the planes would get to each other, and the huge expense of rental costs, those discussions ultimately went nowhere. But the resourceful Nelson did not give up on his mandate to find a way to shoot the scene with practical elements.

NELSON: "We rented a pair of vintage Korean War planes (a Mig and an F-85) and then we hired movie pilots who could stunt fly ten feet from each other. We pre-vised the sequence, and then shot from a Lear jet as close as we possibly could to the jets. Later, we replaced the planes with CG visuals of F-22s and added Iron Man."



DF_110



DF_110



DF_106



DF_115



DF_113A



DF_112



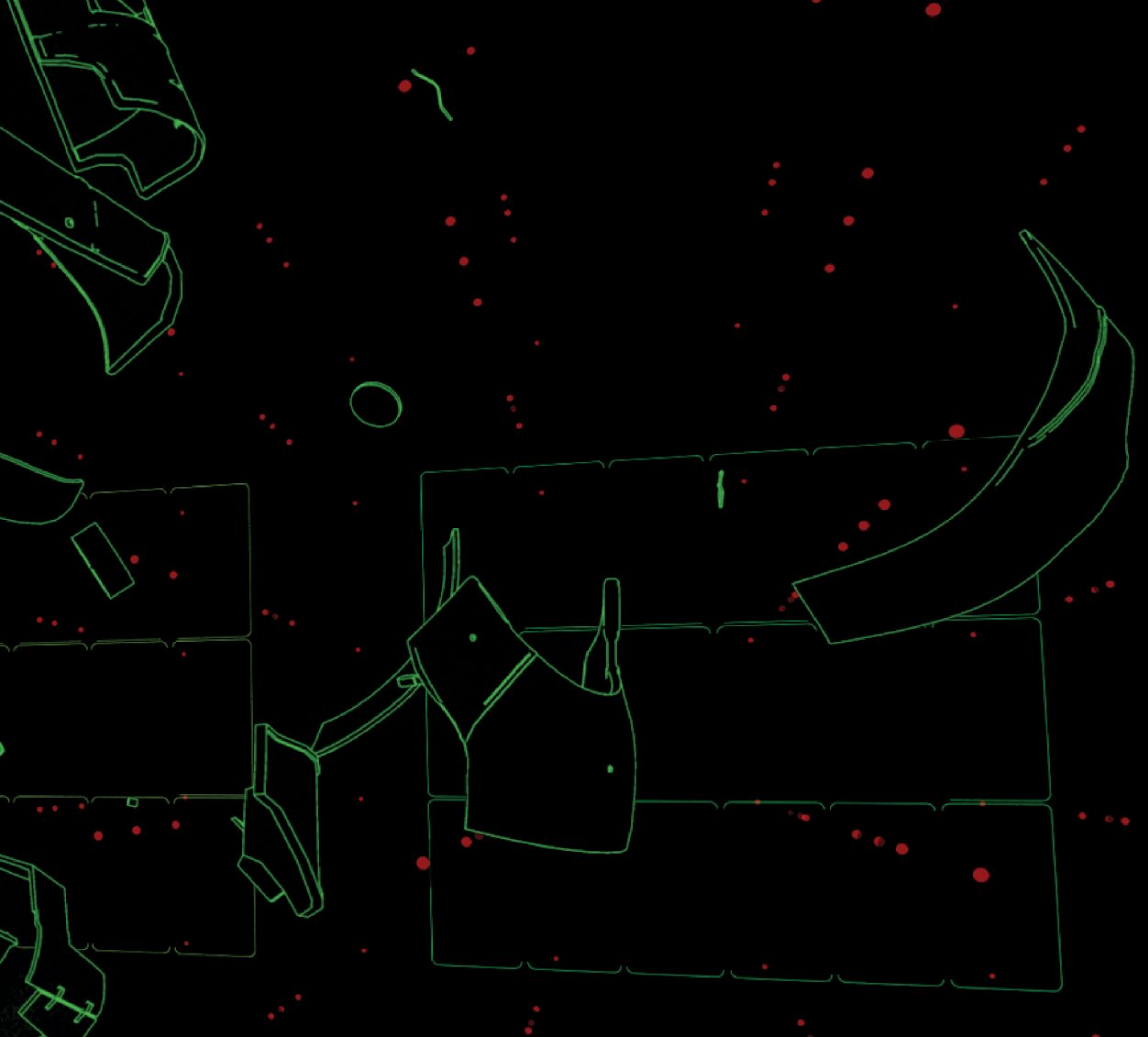
DF_113A



DF_113A

In the end, the *Top Gun* effect was realized. Shooting the vintage jets in their natural environment gave the sequence the practical imperfections Nelson was after. The master chef had just baked a sumptuous cake for which the CG was merely a layer of icing.

NELSON: "The turbulence as the camera follows the plane is real, the hard light playing off the metallic sides of the jets is real, the ice on the lens is real: We were able to deliver a world that has space and volume."







For Lowery, the initial storyboarding process gave way to a process of redrawing them with the animatics in mind. Taking the visual elements of the storyboard frames separately, Lowery drew body parts, objects and set components as individual pieces of art. This allowed Rothwell the opportunity to add complex movement to his 2D depictions of the storyboard action.



Above: Animatic still frames (Jim Rothwell)

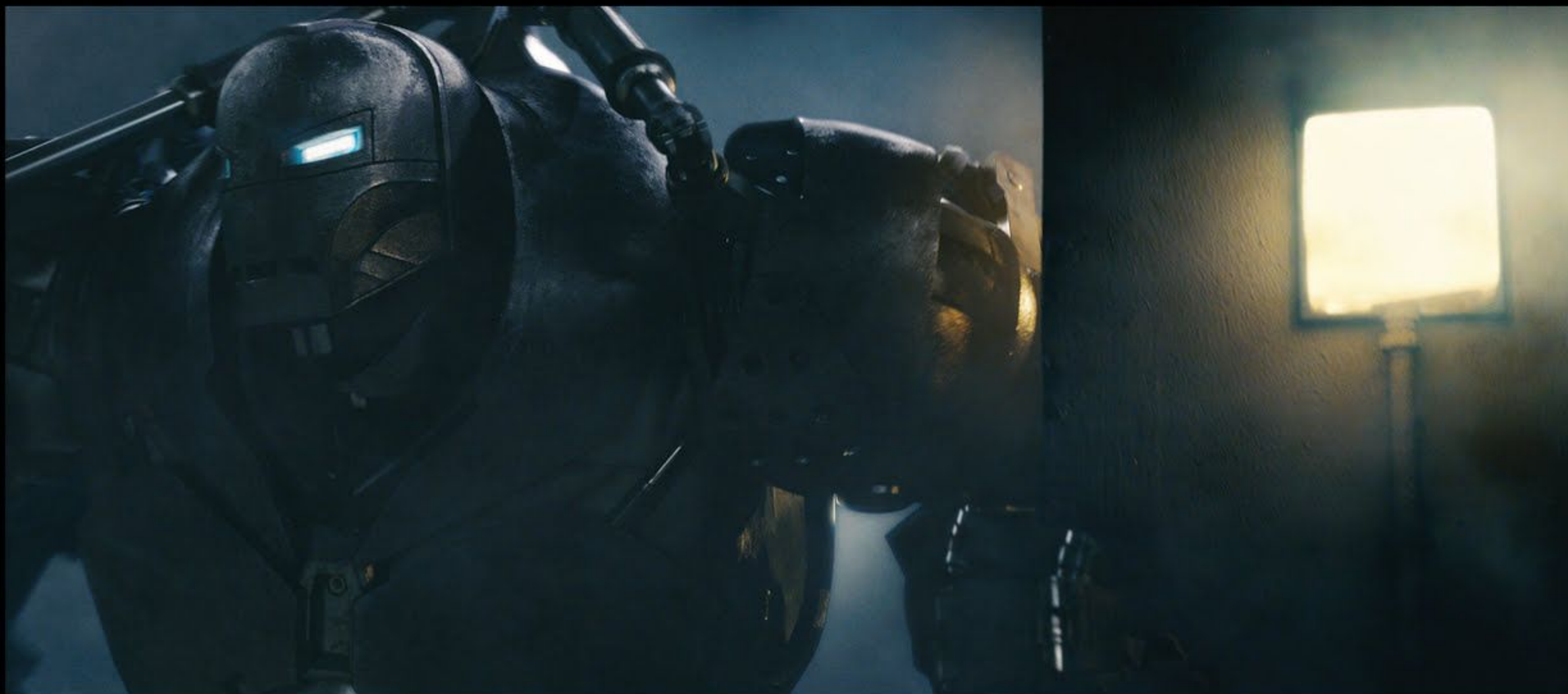
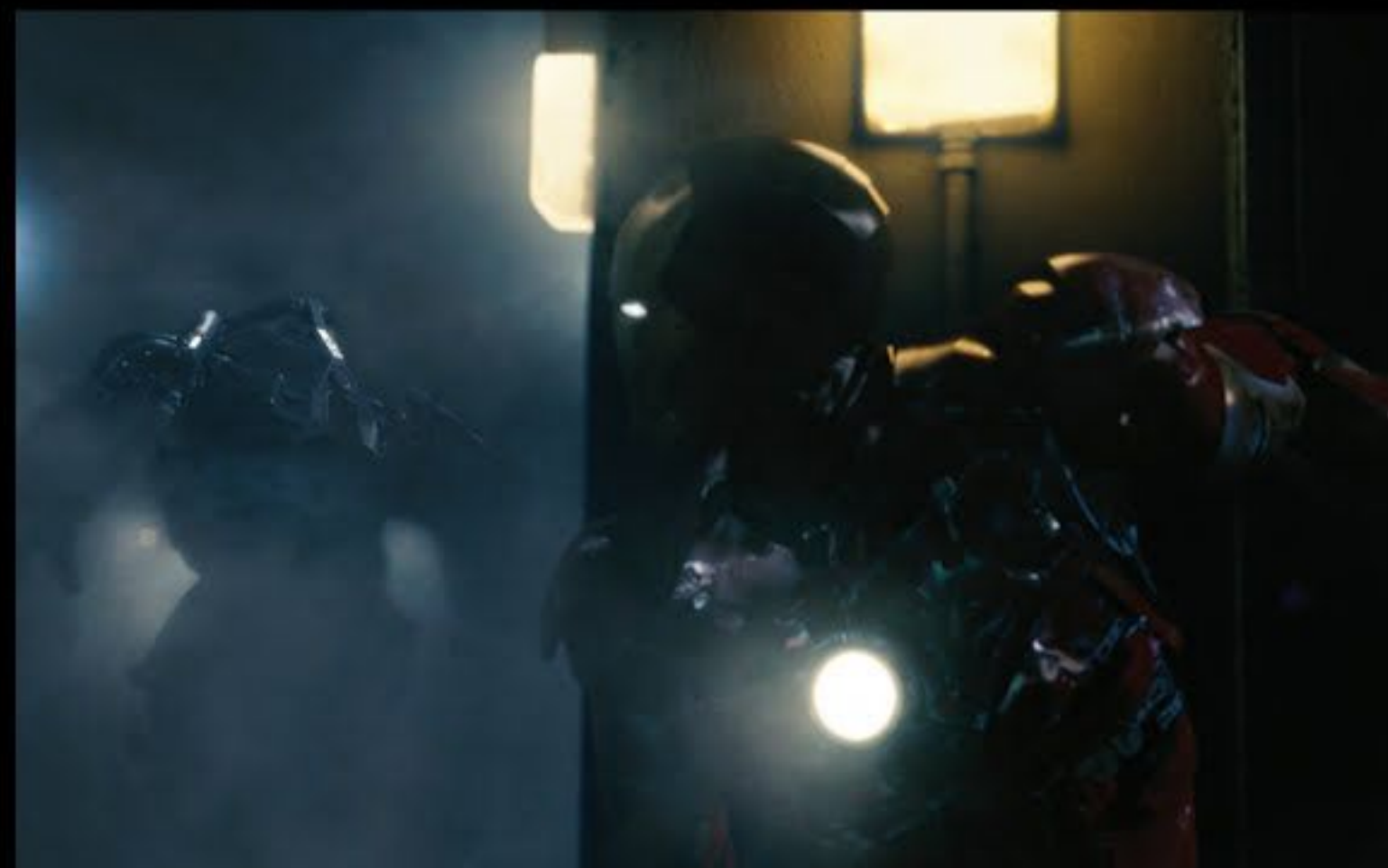
Right: Final battle storyboards (Rodolfo Damaggio)

This sequence featuring hand-to-hand combat between Iron Man and Iron Monger on the campus of Stark Enterprises did not make it past the animatics stage.



Again, as the storyboards flesh out the visual concepts and the pre-vis develops their viability for principal photography, the visual effects coordinator is always thinking ahead to the tasks associated with bringing everything to the final cut. A closer look inside these movie stills indicates the degree to which practical shots are mixed with computer imagery.

NELSON: "The background in the rooftop shots includes real elements that have been ripped apart and put back together through CG. Both characters are CG as well. ILM did a lot of this repurposing for us."

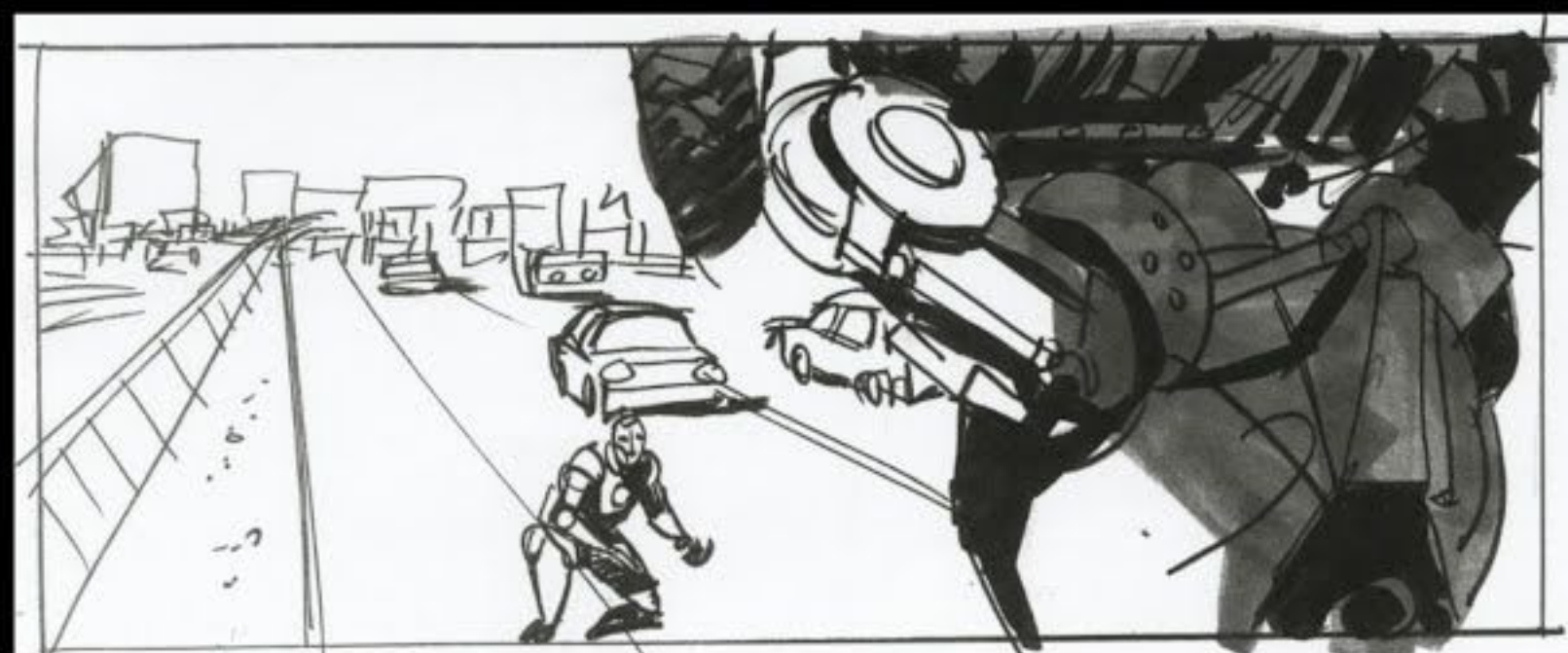
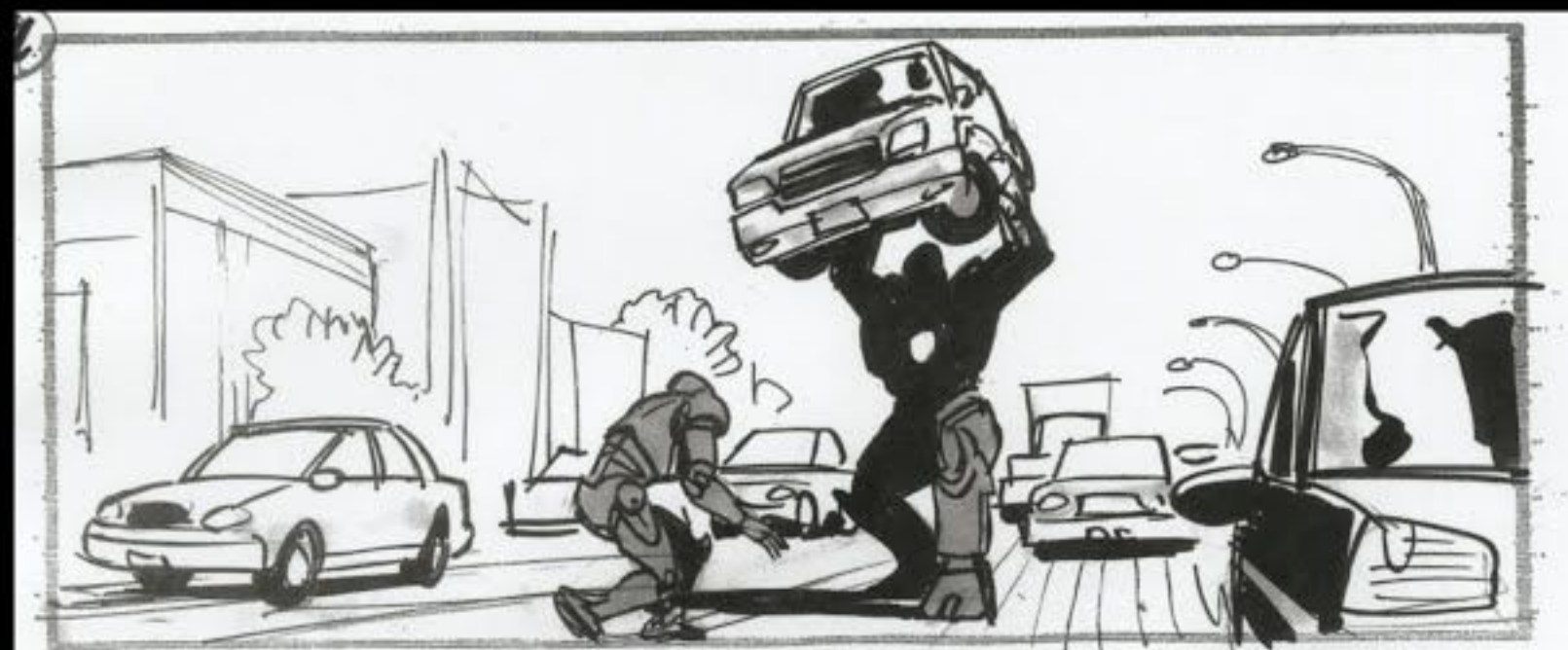




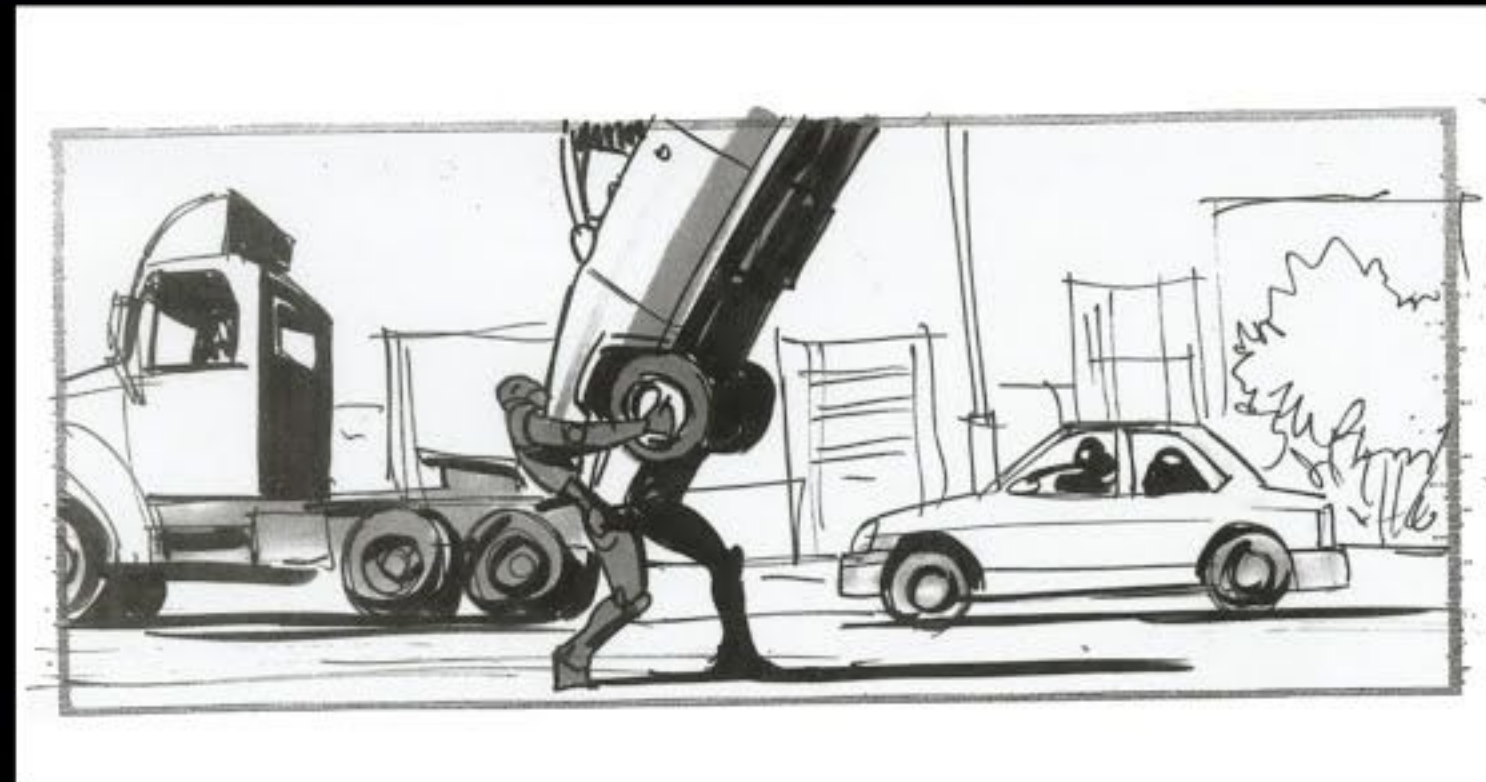
As Iron Monger crashes down to earth and has a face off with the grill of a rapidly braking car, Lowery flashes back to the earliest concept of Iron Man's showdown with the film's villain.

LOWERY: "Early on, there was a different concept for who the bad guy was going to be, and the final showdown was going to be in the villain's homeland way over in 'Wherever-istan.' It seemed to me the threat was really removed from us here in the U.S., so I came up with some crazy ideas that helped drive the story across the ocean, back to our shores. It was a fun process

with John Nelson and Jon Favreau; we were all exchanging ideas about a brawl that would carry the hero and villain all the way to the streets of L.A. A lot of those ideas never made it to the film. But I put the idea together on storyboards, this idea of a pitched battle downtown. Jon looked at the boards that had the battle in Whereveristan, and he said, 'This is the movie we're making...' Then he looked at the boards that had the fight in L.A. and said, 'This is the movie people want to see.' So we moved the final battle to L.A."



Above: Final battle storyboards (David Lowery and Rodolfo Damaggio)





Page 176: Final battle storyboards (David Lowery and Rodolfo Damaggio)

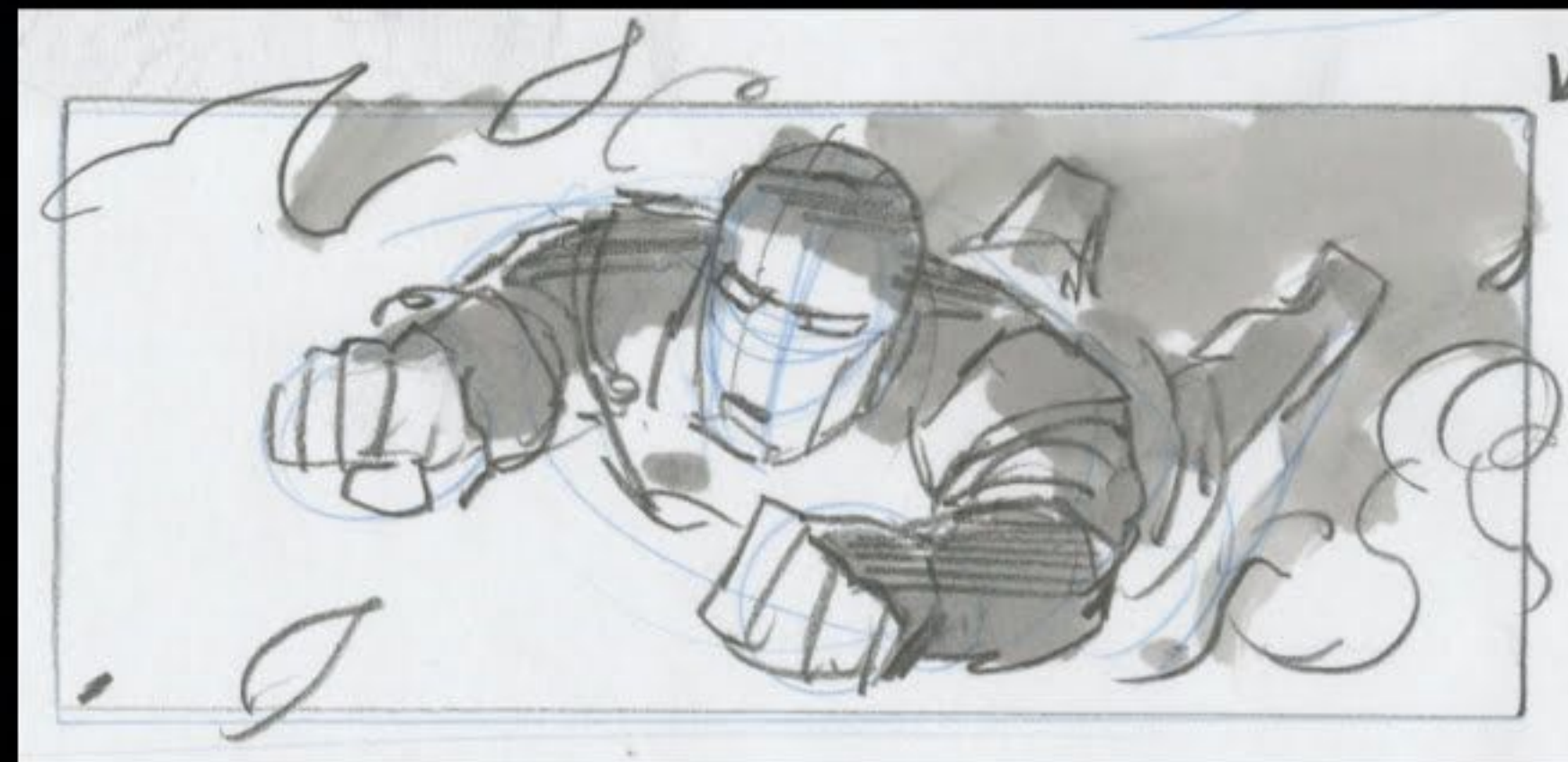
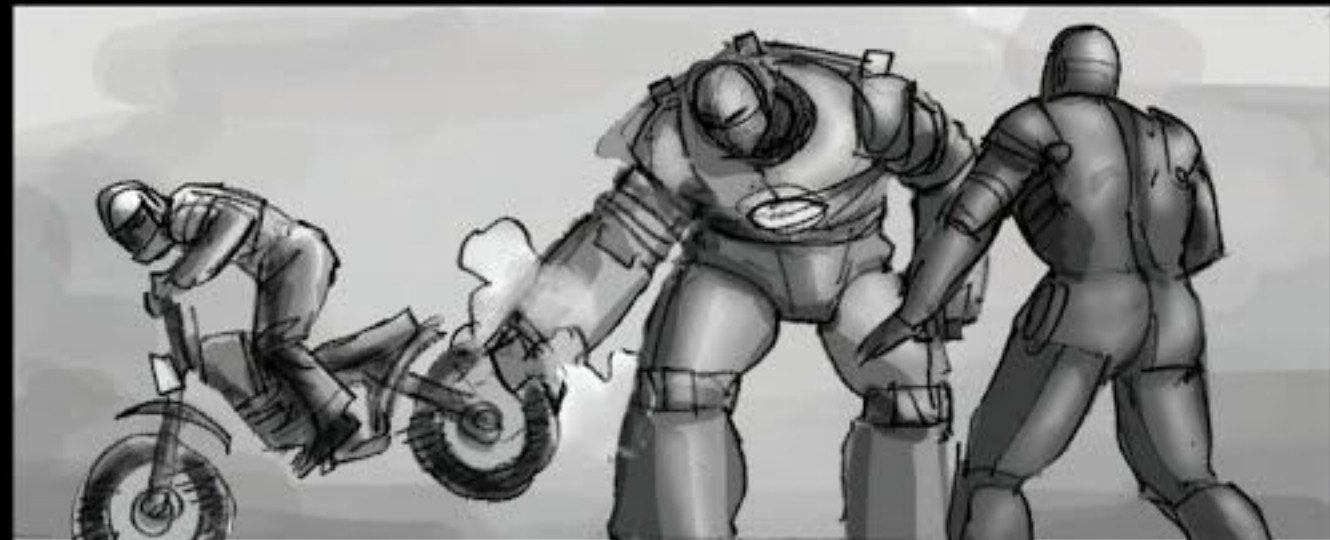
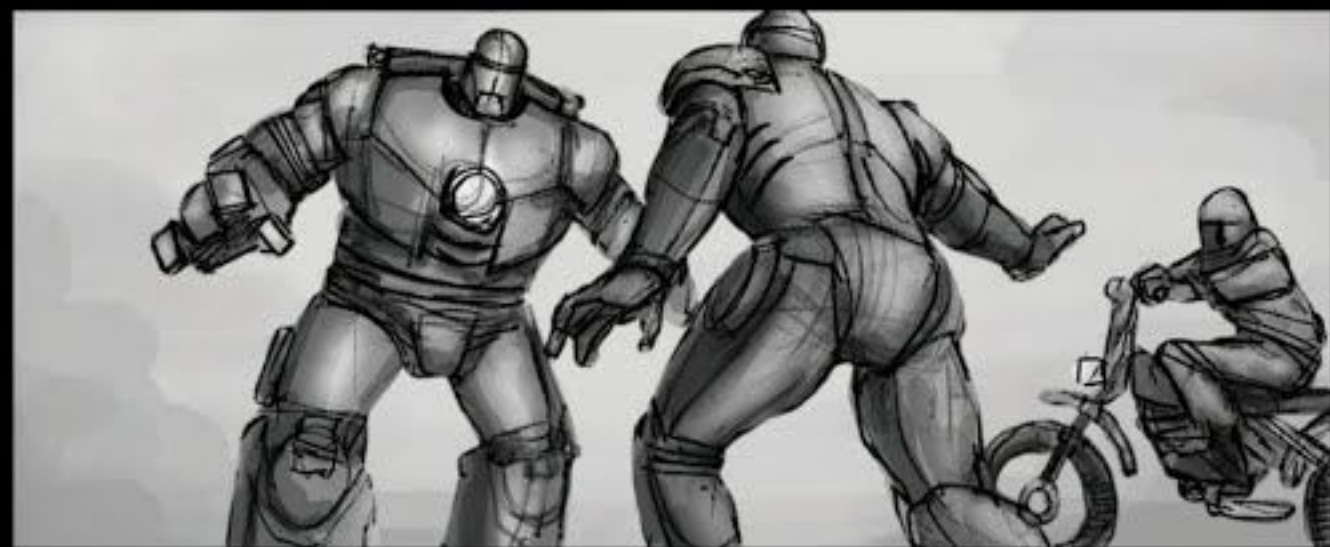
The sequence in which Iron Man lifts the SUV full of panicked children was one David Lowery storyboarded to portray action that was alternately frightening and poignant.

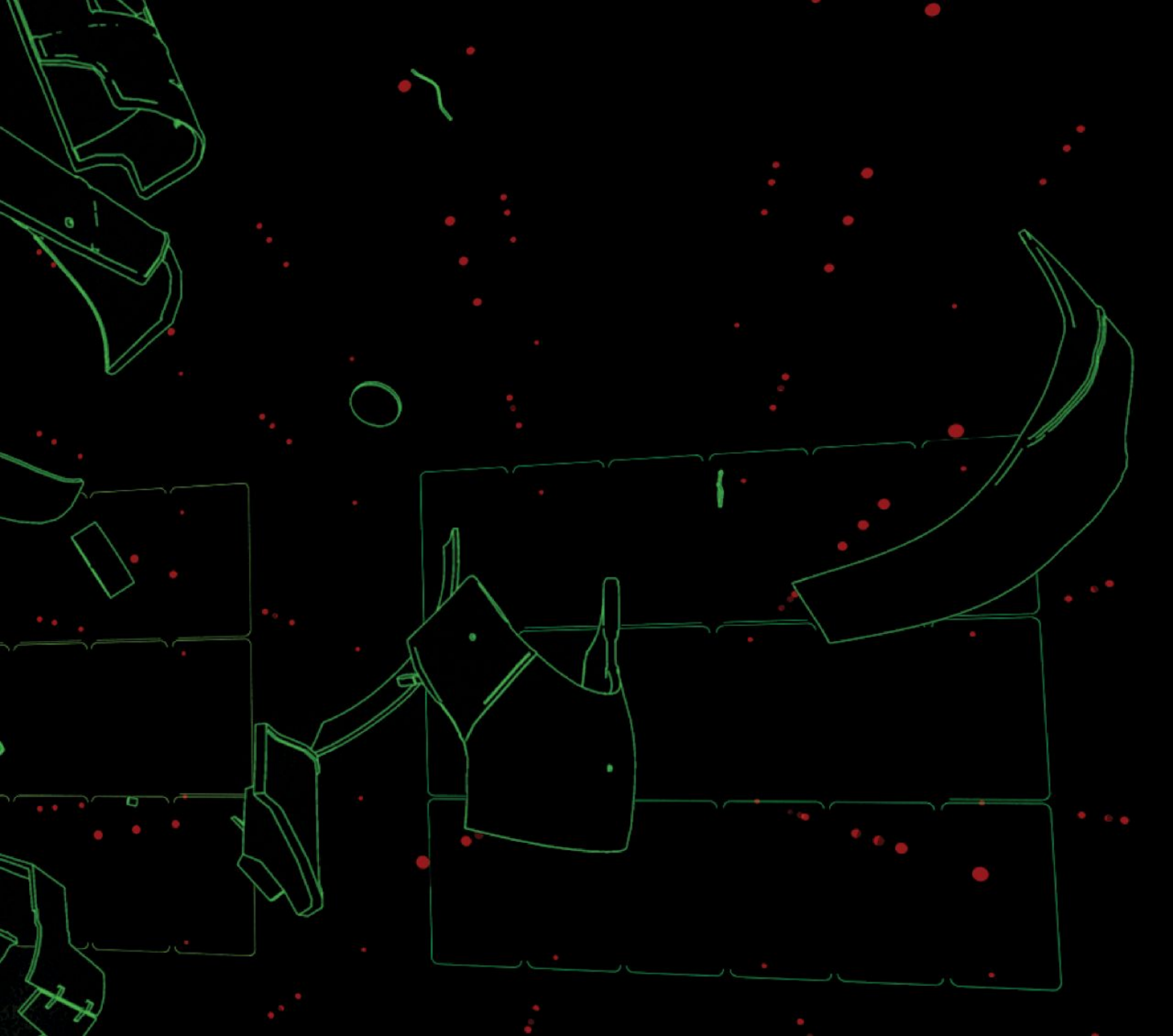
LOWERY: "That was a Favreau beat that we all liked because it brought 'us' into the equation; the freaked out soccer mom stands as a contrast to the superhuman aspects of Iron Man and what he's capable of. Rather than just be a scene about 'stuff happening to things,' this made it a little more human."

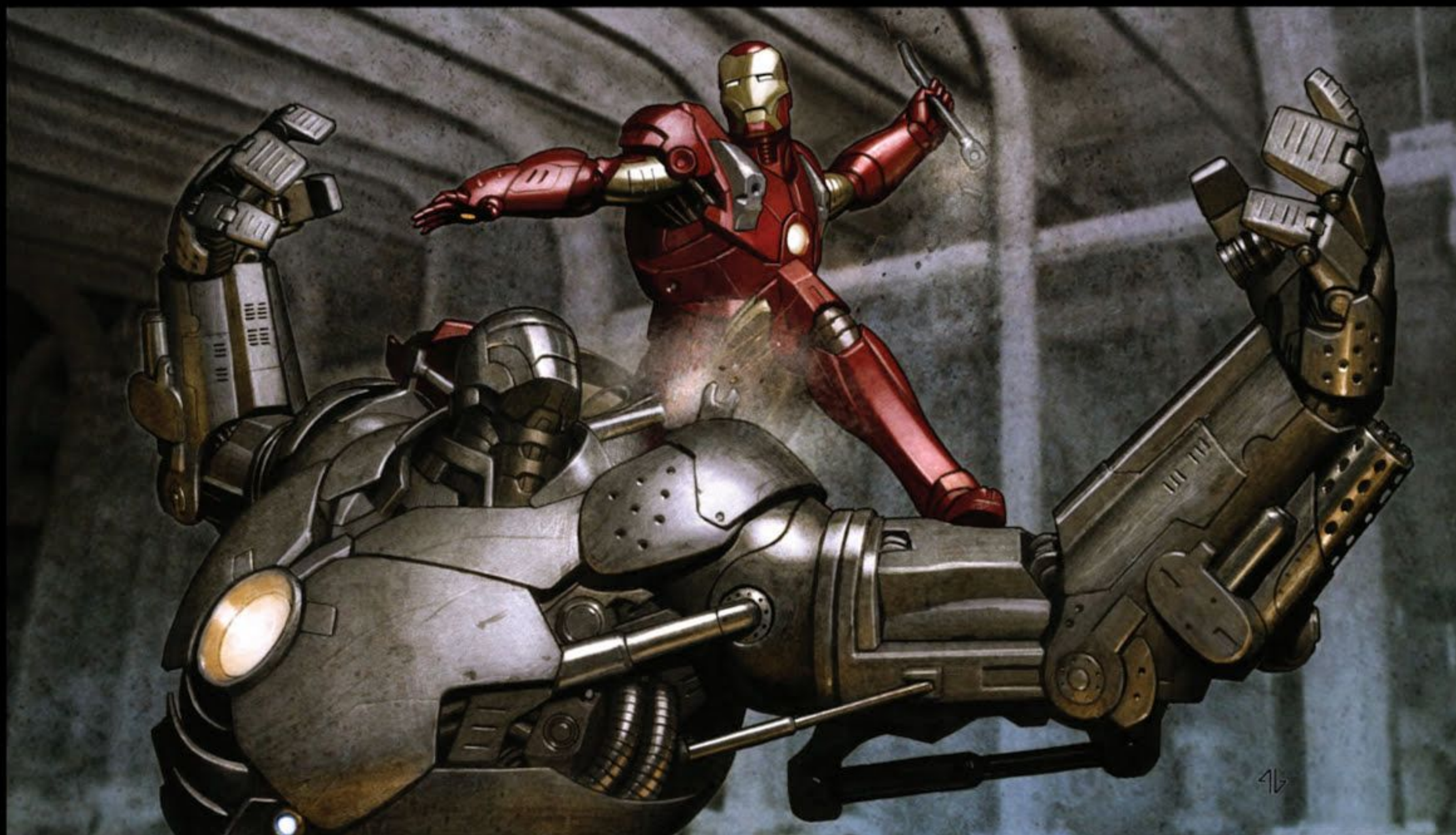
It also made way for a moment that proved to be a big hit with longtime fans of the comic book: The first usage of Iron Man's chest uni-beam (movie still, above left).

LOWERY: "The setup for that is something Jon wanted to carry over from Adi Granov's comic books. We saved it for this shot, lifted it right from "Extremis," where he lifts that Porsche up and uses his chest blast. It was such a strong visual."









Above: Final battle keyframe art (Adi Granov)

Adi Granov's relationship with Iron Man began in 2004, when he turned in a series of evocative covers for the monthly comic title. Even for a character as steeped in high-technology and forward thinking as Iron Man, Granov's work was singularly futuristic, with eye-popping armor textures that made fans drool. Marvel knew they had something special in the synergy of Granov and Iron Man, and they overhauled the title and gave him the spotlight as regular

artist. The resultant six-issue story arc — "Extremis," written by Warren Ellis — highlighted the sci-fi elements of the character, which the sci-fi leaning Granov found very appealing. Little did he know that the work he had done on "Extremis" had filtered to the Iron Man film's production crew, and would so inspire the illustrating team tasked with coming up with concept art and keyframe illustrations.



Above: Final battle movie still

The keyframe art that Granov created of Iron Man's desperate attempt to disable the Iron Monger's armor (page 180) translated beautifully to the final shots. It depicts the raw, heroic fortitude of Iron Man and his dogged refusal to let evil triumph over good.

Meanwhile, one of the middle stages between concept art and final shots is pre-vis animation (right sidebar), a process that follows the fight choreography shot for shot. The climax of the film went through many different permutations before the pre-vis was complete and ready to move on to principal photography.



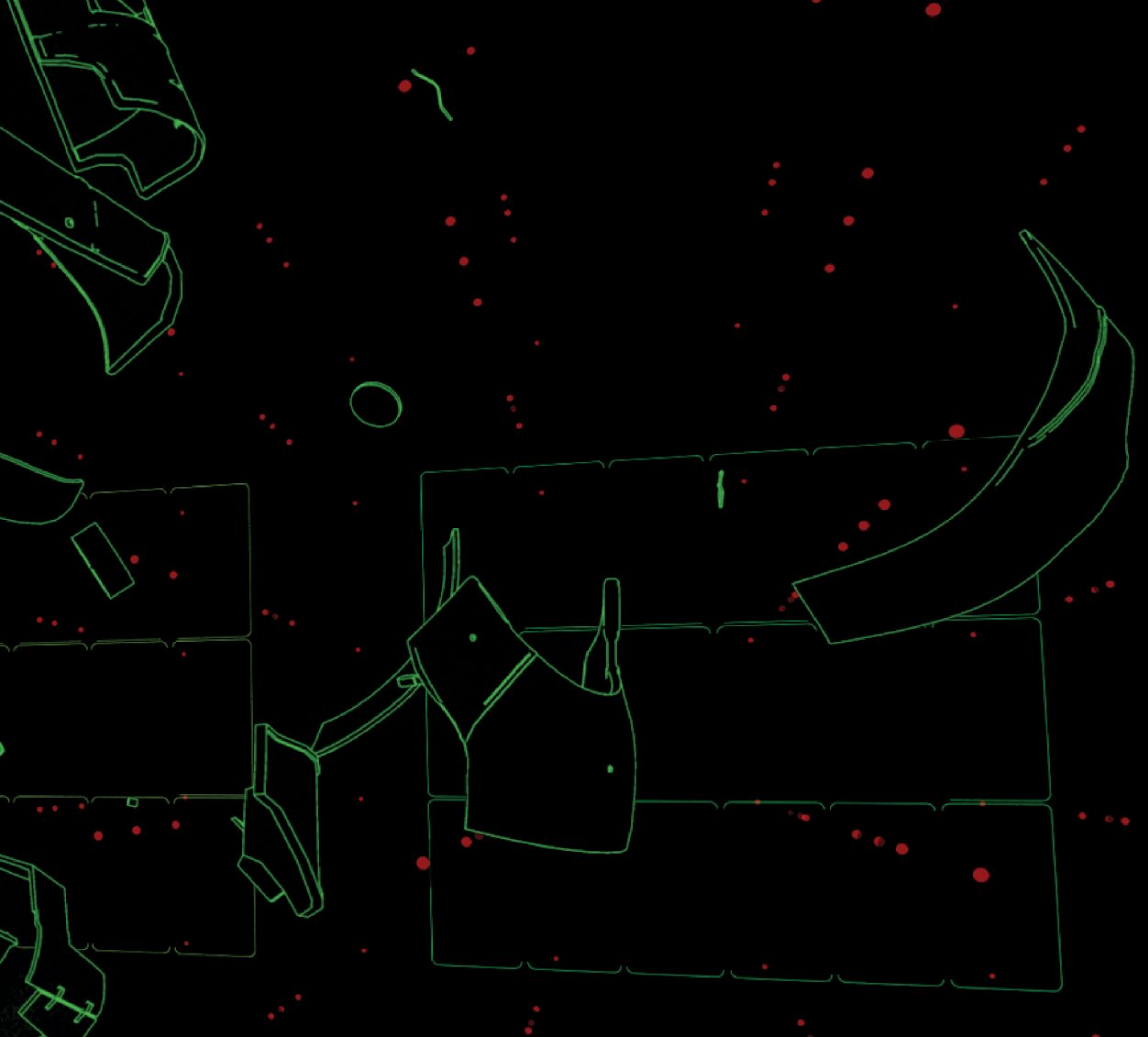


Left: Keyframe art (Adi Granov)

Above: Pre-vis animation

Page 183, top: Keyframe art (Ryan Meinerding)

Page 183, bottom: Movie still



CHAPTER 6:

ON THE BLEEDING EDGE

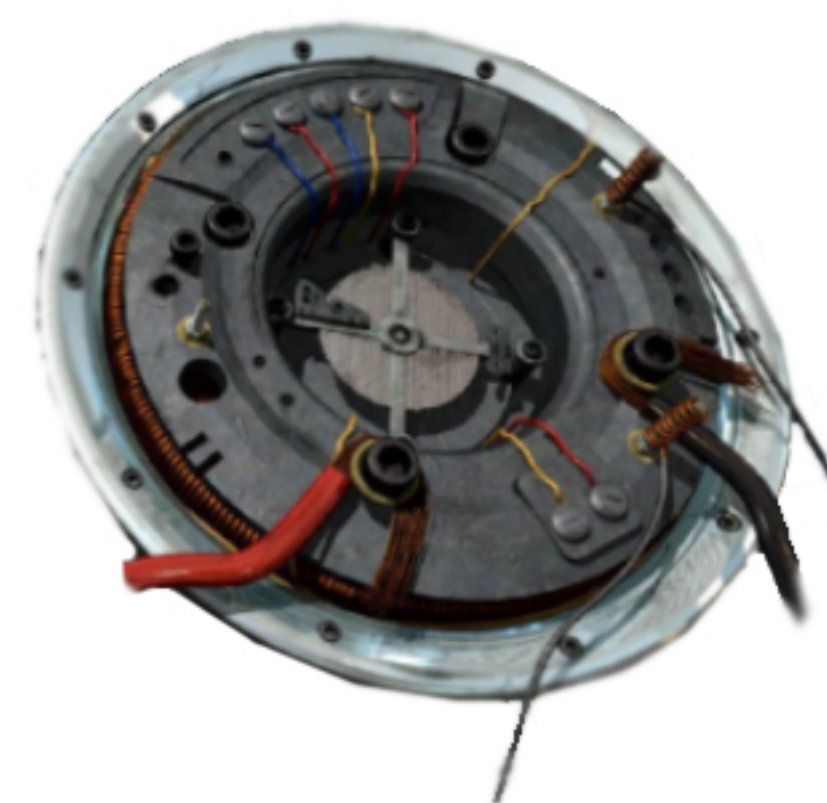
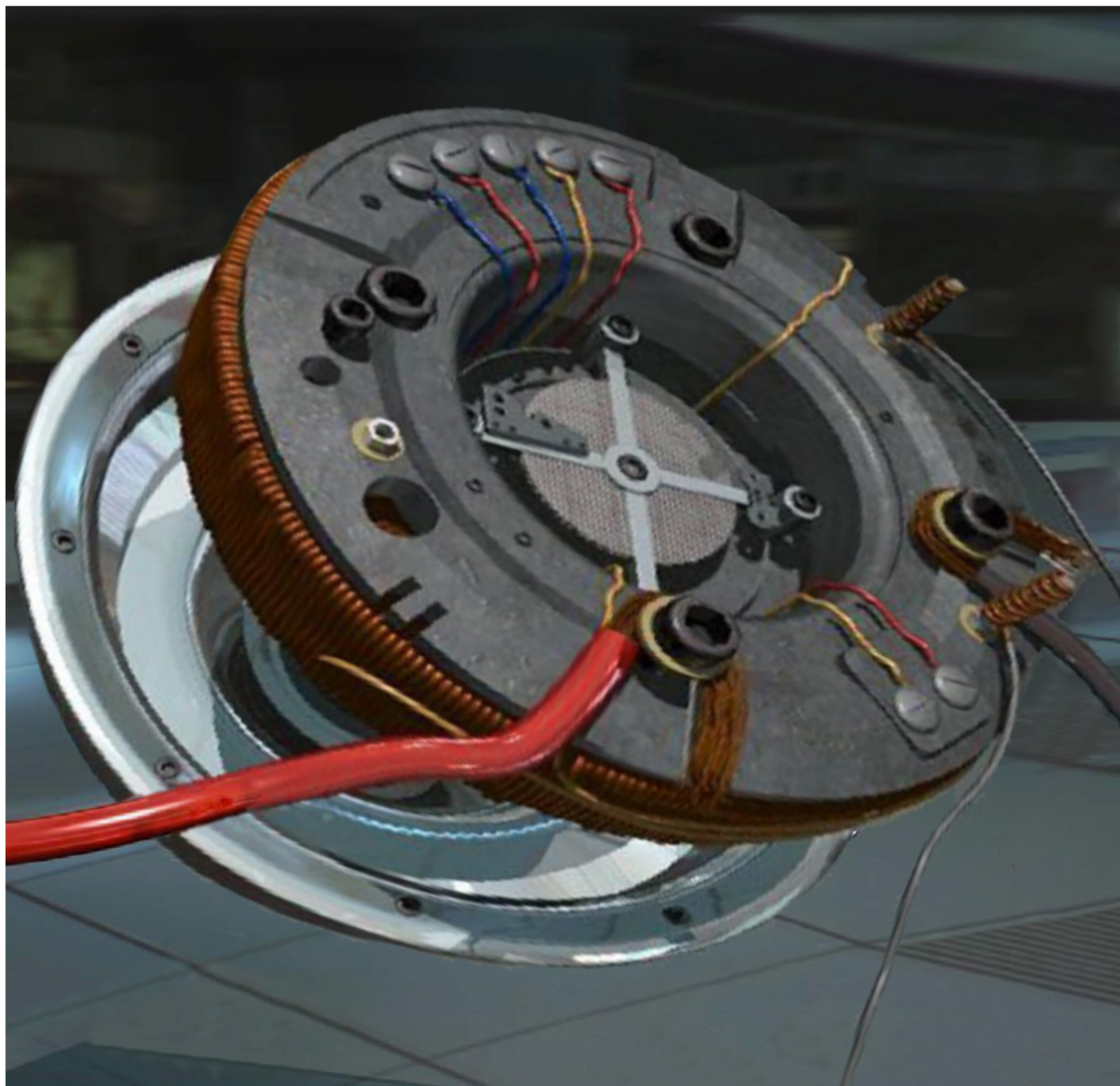
If there is one thing to take away from *Iron Man*, it's that Tony Stark's miraculous suit of armor will always represent the white-hot edge where the tried-and-true technology of the past meets the seemingly impossible ideas of tomorrow. And necessity is the mother of reinvention. It is obvious in the development of the Mark I, Mark II and Mark III suits that Tony is relentless in his pursuit of technological superiority, and that he is often driven by a need to adapt to the challenges he faces. After interacting with an F-35 that can fly at Mach 4, Tony will design his suit so it can fly faster. After experiencing an icing problem at 5,000 feet, Tony will design his suit so it can fly farther. And when his armor takes the full brunt of a tank's artillery shell, he will use that information to build it safer.

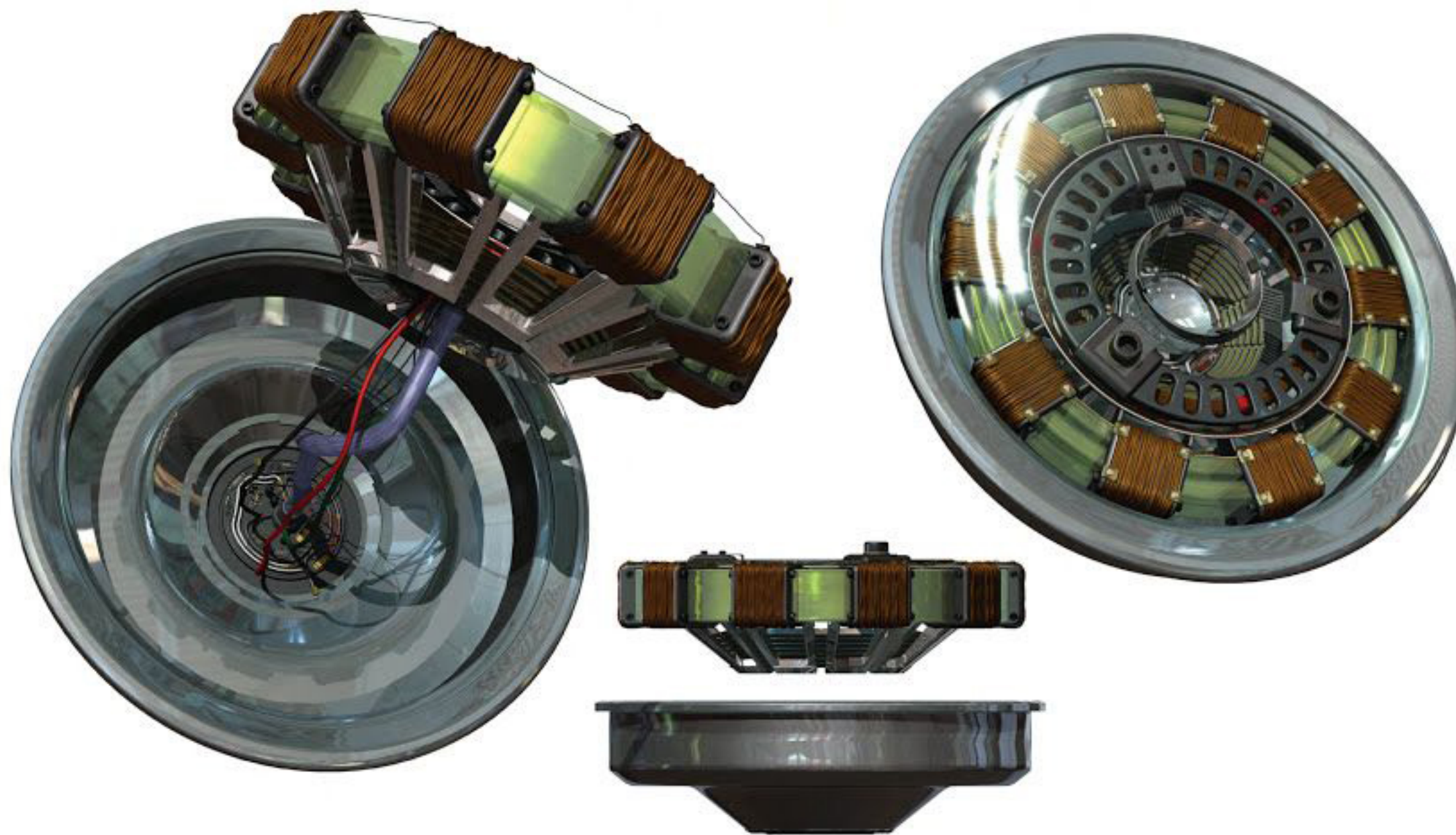
The determination to accept nothing less than perfection in his armor manifests in other areas of his life: in his weapons systems; in his planes; in his cars, toys and gadgets; and in the very heart of a hero. The challenge for *Iron Man's* designers was to not only play futurist and imagine the improbable, but to also make it look possible, grounded and as realistic as a new-model car on a showroom floor. Their task was to make sure that anything that came off a Stark assembly line, whether it was the Jericho missile or a souped-up Humvee, represented in form and function the bleeding edge of technological ingenuity.

After all, that's how Dad did it, that's how America does it, and it's worked out pretty well for Tony Stark so far.





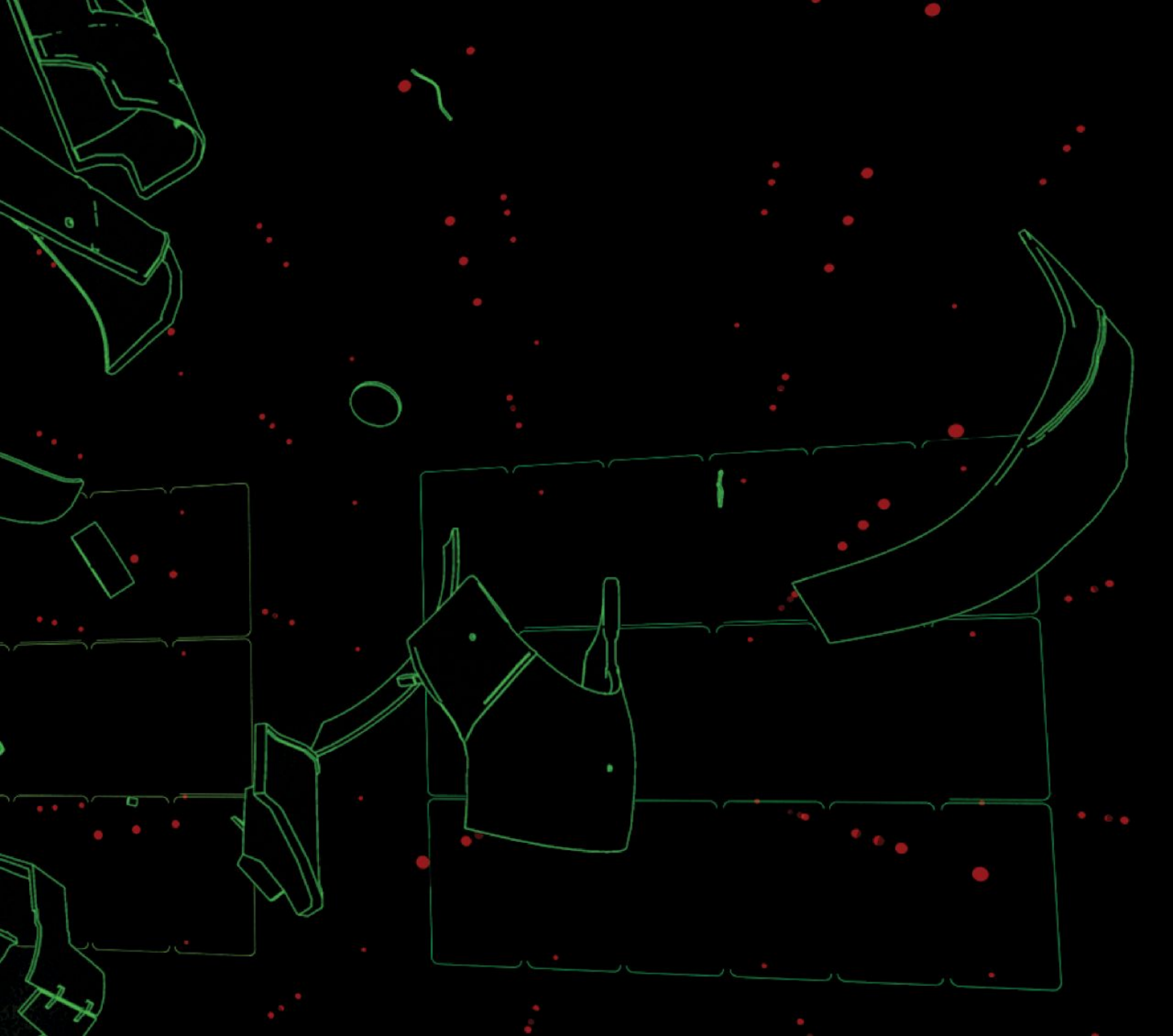




The RT was meant to keep the shrapnel wedged near Tony Stark's heart from inching any closer, where it would prove fatal. To achieve that, the RT was conceived as an electro-magnet that would keep the shrapnel at bay. The primitive design included some modest electronic elements and copper wiring that ran a current through cables attached to a car battery. Elegant it certainly was not, but the raw design of this RT would provide the inspiration for the far more advanced versions Stark was able to build in the safety of his Workshop.









To build the formidable array of Stark weaponry, Bobbitt had his team of craftsmen working twelve-hour days. The entire process was a non-stop, four-month endeavor with a crew that eventually numbered 150, all to bring the design of the Jericho to life.

BOBBITT: "We worked backwards: Usually you come up with a concept from the script and design based on that. But we wanted to really reflect the reality of the high-tech weapons world and we used that to finally seed the concept of the Jericho into the script."



Saunders' final version of the Stark Jet (above) revealed inspiration from aircraft as diverse as the F-22 and the Boeing responsible for toting the Space Shuttle around. SAUNDERS: "It evoked some aerodynamic forms that we've all seen before and that we associate with the highest of the high-tech, so it's not completely sci-fi. But it's still exotic enough that we think, 'Wow. This is miles ahead of your standard business jet!'"





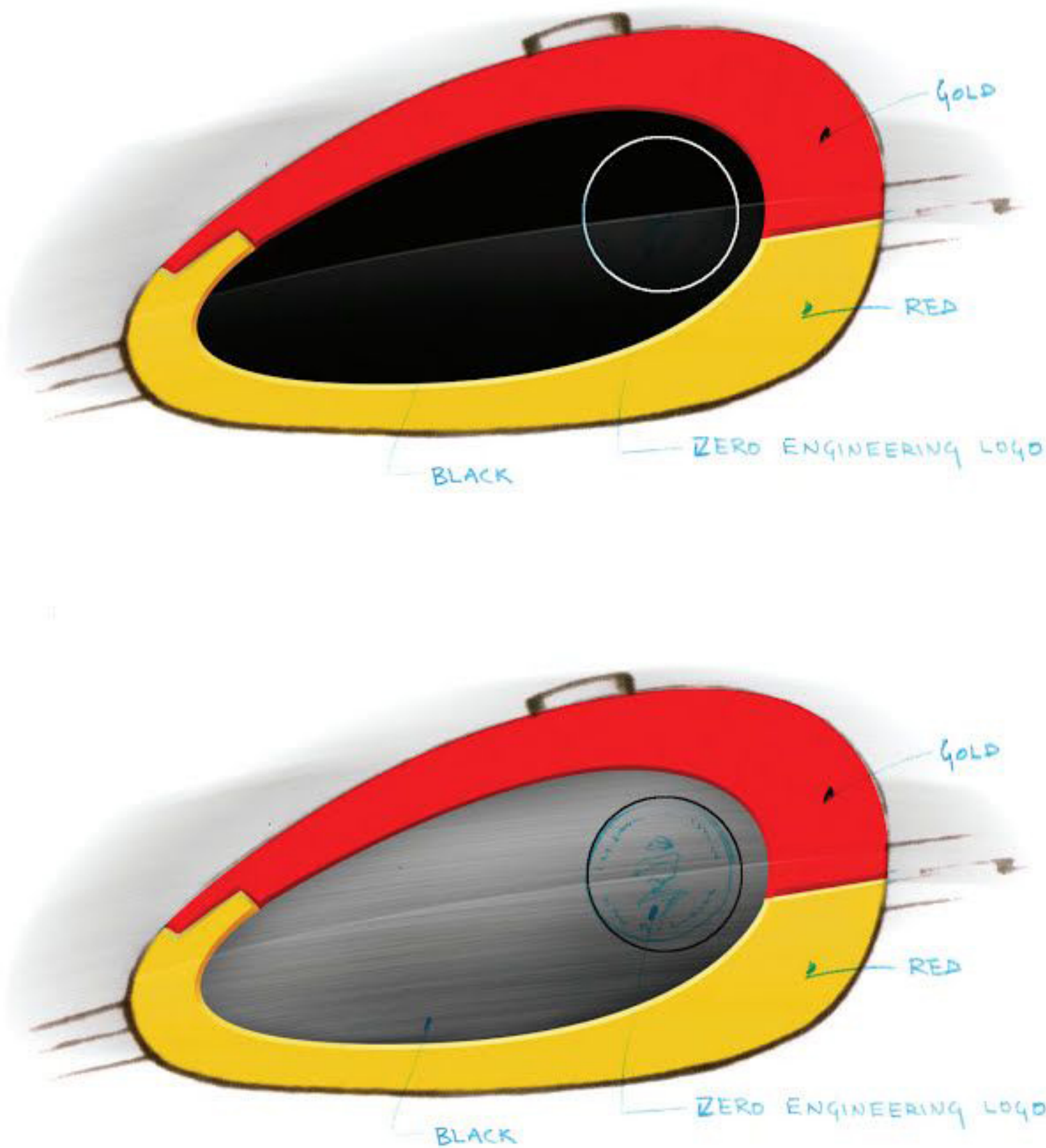
Page 194-195: Stark automobile concepts (Harald Belker)



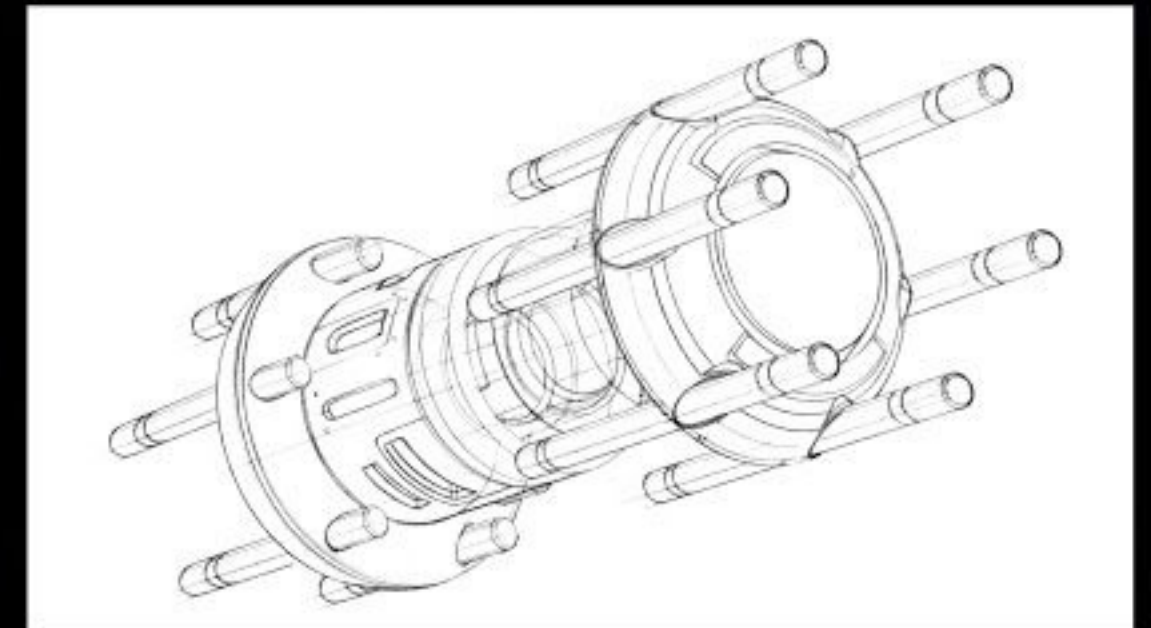
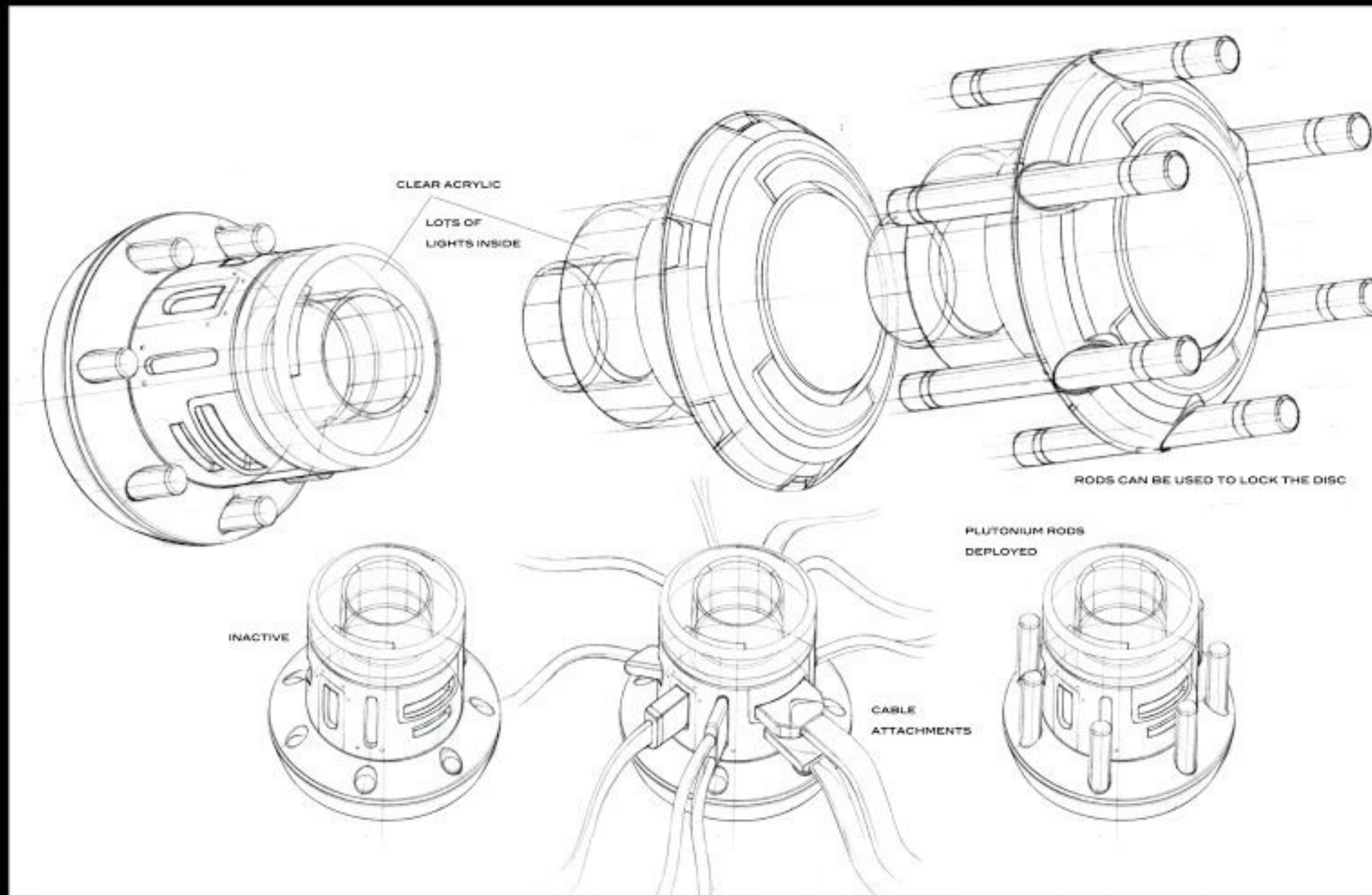
Tony Stark rules the air in his private jet (and now, an amazing suit of armor), but he also asserts his power on the ground with a fleet of flashy, futuristic — and awesomely expensive — automobiles. For a man who wishes to live not even one moment stuck in the past, his need for speed behind the wheel of a souped-up sports car further establishes his constant push towards the future.

The Stark automobiles also played the role of hapless victim when, after testing the Mark II suit in its first joyride, Iron Man came crashing down on top of his beloved fleet.

BOBBITT: "The vehicles played a big role in the writing of the script in that we had to figure out what we could afford to damage. There were millions of dollars worth of cars down in that Workshop! We had many meetings about what cars we could ruin when he lands on them. We would spend a lot less money on the hollow shell of a car instead of ruining a perfectly good car."



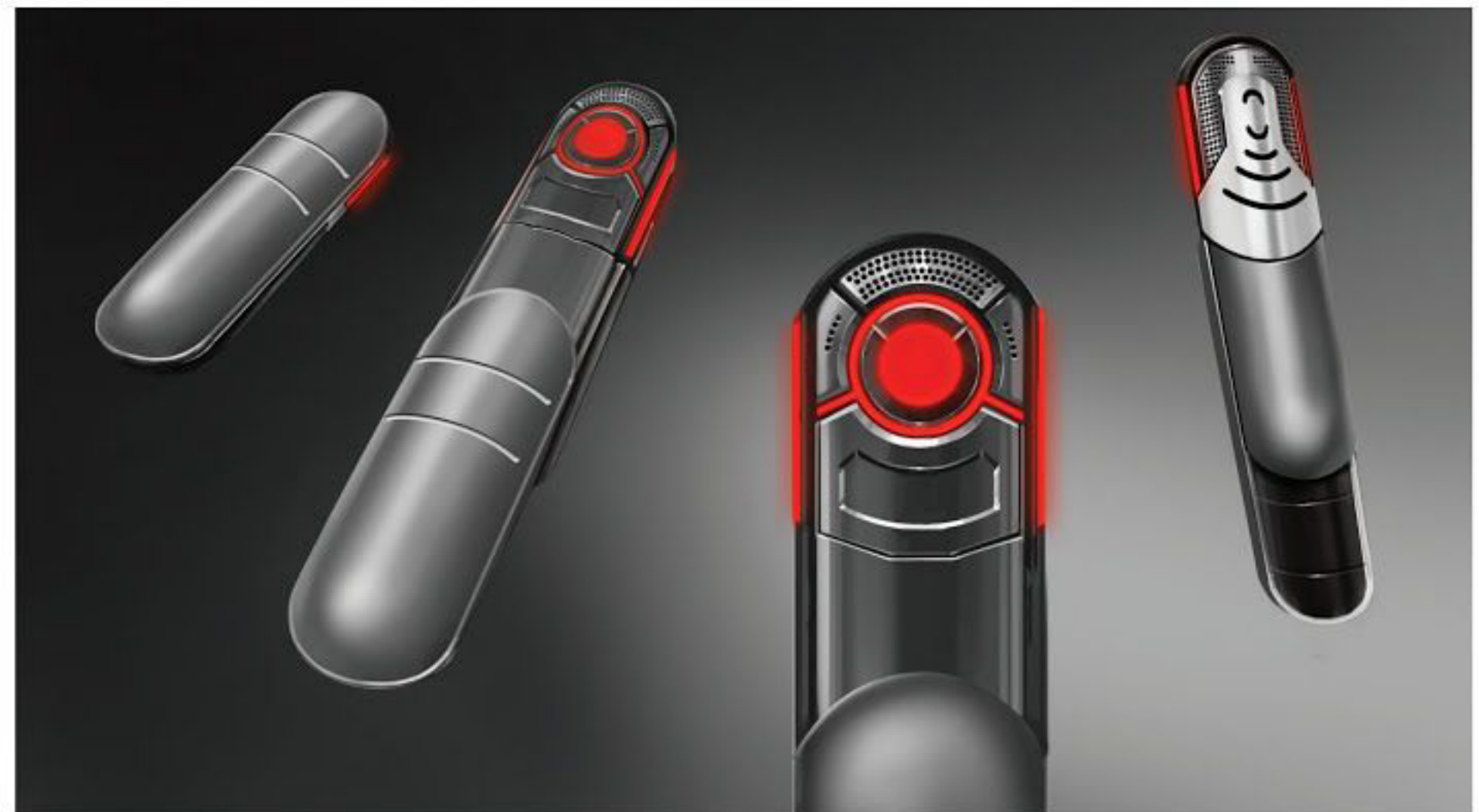
The inclusion of the Zero Bike (right) among Tony Stark's automotive toys, as well as its designs (left), reflected Jon Favreau's love of bike building and the "monster garage" ethos, which played perfectly into the main character's hands-on, take-charge attitude in his Workshop. Its hubless wheel design also represents cutting-edge technology that, while tantalizingly close in the real world, is the kind of thing Stark would be tinkering with and perfecting as a hobby.



The Mark III RT blueprint designs by Ryan Meinerding (above, left) were handed over to Bobbitt to manufacture. After the basic shape was figured out, his next task was to tackle the RT's lighting elements. With a team of electricians and specialty lighting people, he came up with the strongest, most versatile lighting system they could manufacture from scratch, one that when lit up to full force pushed up to 400 degrees in ten minutes. For most of the scenes filmed with the Mark III RT, practical lighting was perfectly suitable for cameramen to get good shots with no digital enhancements necessary.

The sonic device used by Obadiah Stane to paralyze his victims (right) was designed in a relatively short amount of time by concept artist Ryan Meinerding. Wanting to avoid a design that might appear too "consumerish" — like a gadget one could find on the shelf at a Best Buy — he set about crafting something that had a more high-tech, sci-fi edge to it.

MEINERDING: "The original concept called for something with a lot of moving parts. But the more simple the mechanism, the better, I thought. I tried to create something that had a perforated hole for the speaker, giving it the implication that it had a sort of sonic effect. Also, the lighting would be enhanced by a rippling effect to make it look like there was a lot of power emanating from it."



MARKETING IRON MAN

Spider-Man. Superman. Batman. Wolverine and the X-Men. These are all comic-book characters that exist at the forefront of the pop-culture zeitgeist. Utter the names of any of these legendary super heroes, and their iconic stature instantly pops into the minds of the average person. After decades of ruling the comic-book sales charts and the ratings of animated and live-action TV fare, these icons hardly had anything further to prove to their fans before they were turned into blockbuster films. And naturally, when big-budget films were eventually made, long lines of crowds queued up to see them, launching successful franchises that still exist to this day.

The aphorism “build it and they will come” may explain a decent proportion of the aforementioned icons’ movie success, but it’s not the kind of thing that producers lining up a multimillion-dollar budget are going to put all their faith into. On the contrary, besides making a solid movie, the question foremost in a producer’s mind is “How are we going to market this thing?” A question easily answered for heroes to whom the public needs no introduction. But Iron Man, as it turns out, was not such

a character. A cool-looking super hero with awesome powers and a compelling backstory? Absolutely! But a recognizable icon? Even after 45 years of success in the comic-book world, hardly. Aside from a brief run as a Saturday-morning cartoon in the swinging late ’60s, the heroic alter ego of Tony Stark has rarely – if ever – tickled the frontal lobe of pop-culture consciousness.

Enter the movie-marketing pros at Paramount. After the movie was complete and its producers were anxiously waiting to see the fruits of their success up on the screen, it was up to the mavens of the marketing department to work their magic. And a lot was depending on them doing it right. For even though the movie was ostensibly about a billionaire genius in a basement garage crafting a world-beating suit of flying armor, movie marketers couldn’t afford to take a “build it and they will come” attitude when promoting the movie. Indeed, in a marketplace more crowded than ever with tales of super-heroic suspense, the marketing of *Iron Man* was going to have to be performed with feats every bit as heroic as those that had come before.

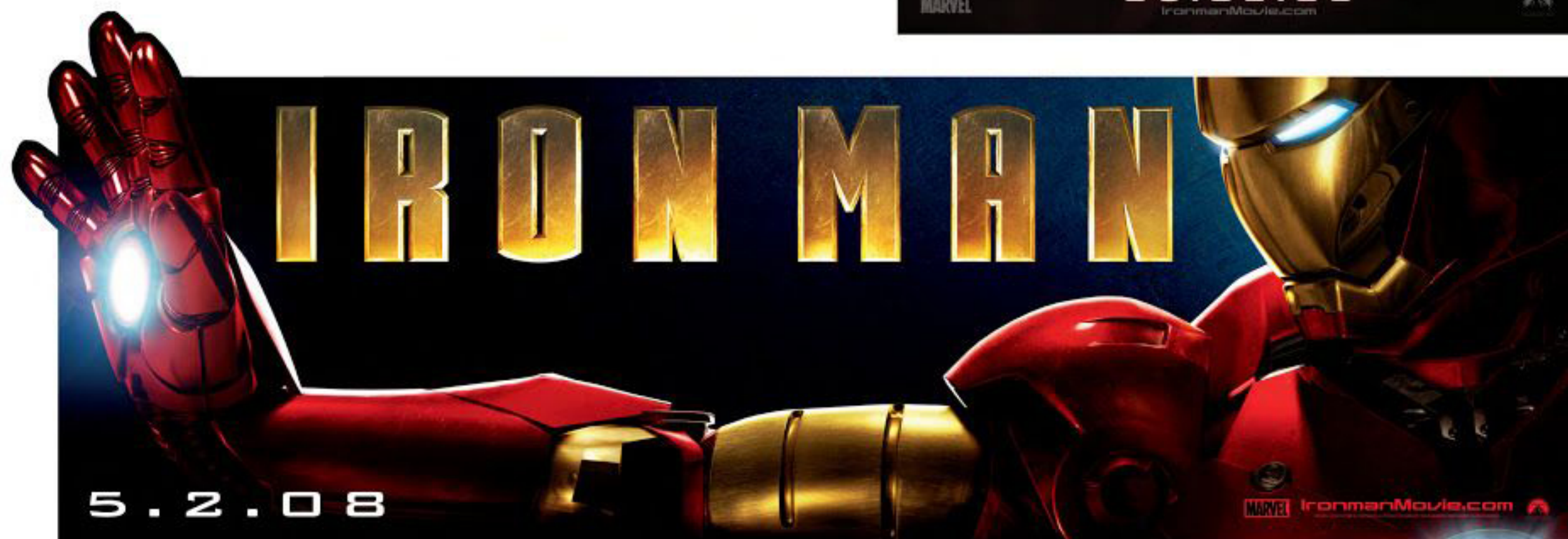


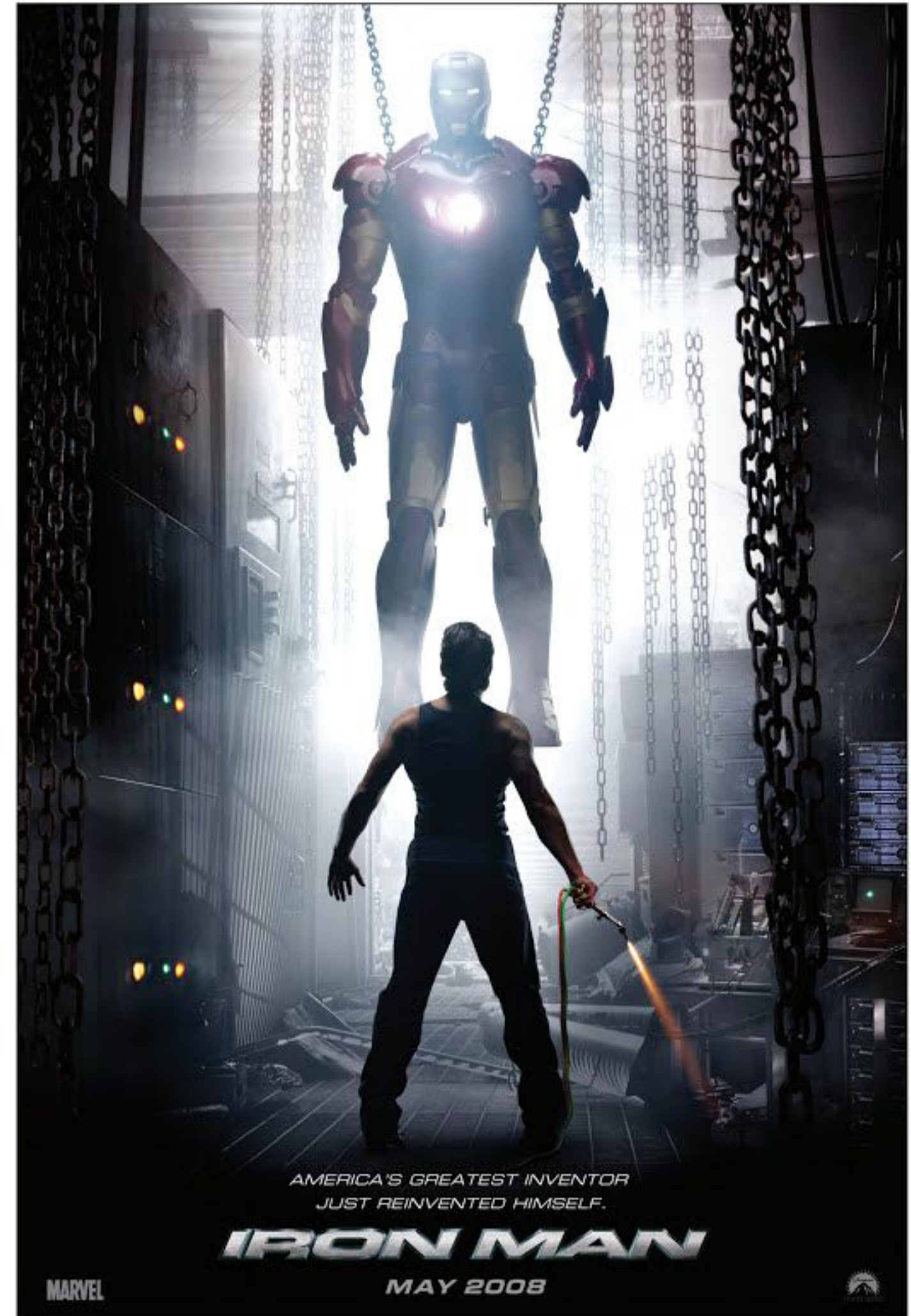
Josh Greenstein, president of marketing for Paramount, was the executive in charge of introducing Iron Man to millions of potential moviegoers, and thus tickling their interest in coming to see the movie. In concert with Jon Favreau and the folks at Marvel, Greenstein entered into his duties with confidence.

GREENSTEIN: "Jon Favreau and the guys at Marvel, we looked at them as partners, as a team, and we had a great time setting up the campaign. They were great collaborators because, frankly, they know the most about their franchise. They know more about Iron Man and his world than anyone."

In close consultation with Marvel and *Iron Man* producers, Greenstein sorted through hundreds of options before settling on the precious few that would form the basis for his campaign of posters, standees, commercials and trailers.

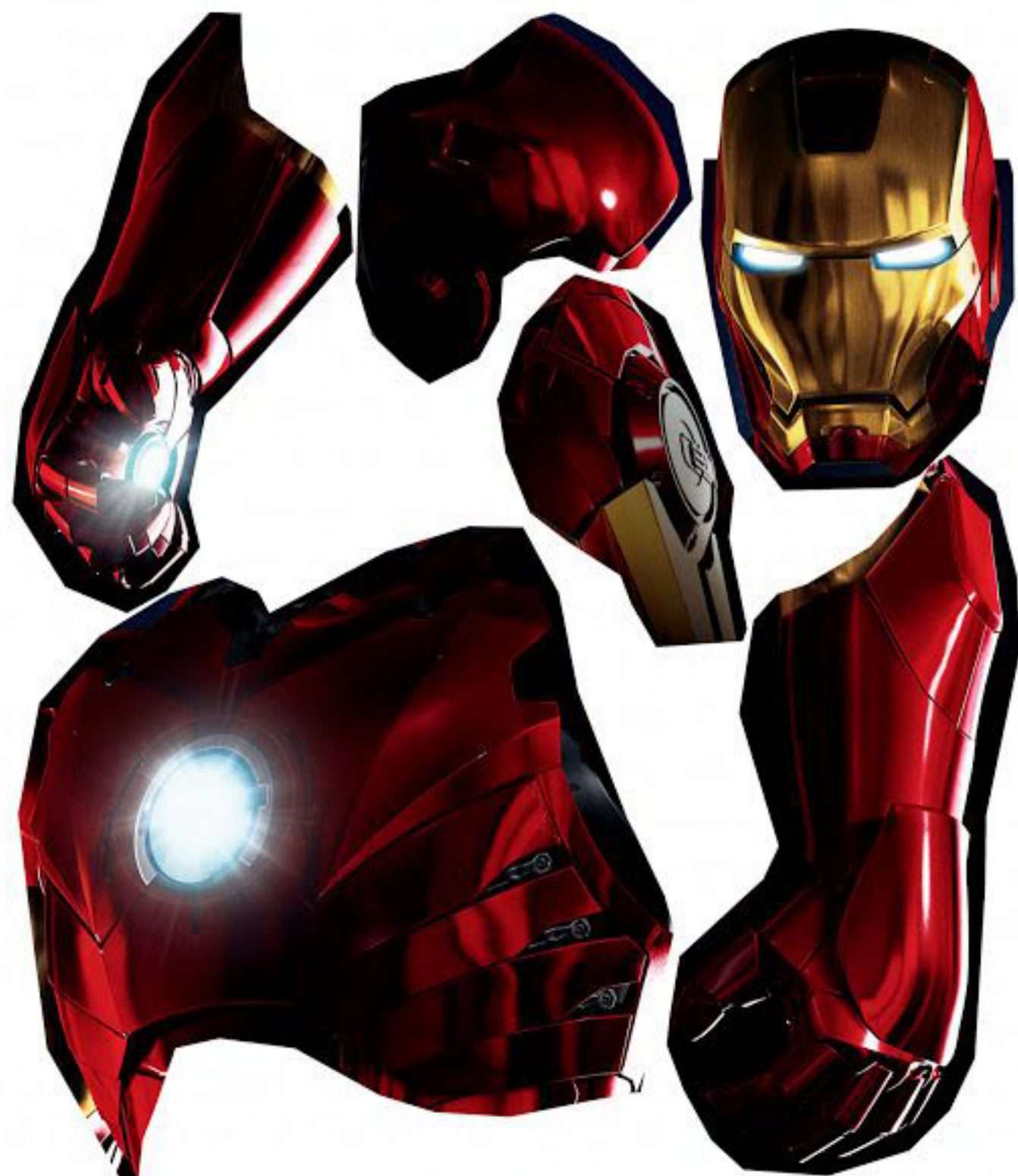
The first print poster was the half mask teaser (right), designed to position Iron Man as a new breed of super hero. Whereas most other iconic heroes were superhumans with outlandish powers, Tony Stark was a mere mortal with a big brain who made up a big, bad suit of armor. The iconic image of the half mask gave him a clean, strong and visually striking look, while also suggesting there was much more to learn about the hero.





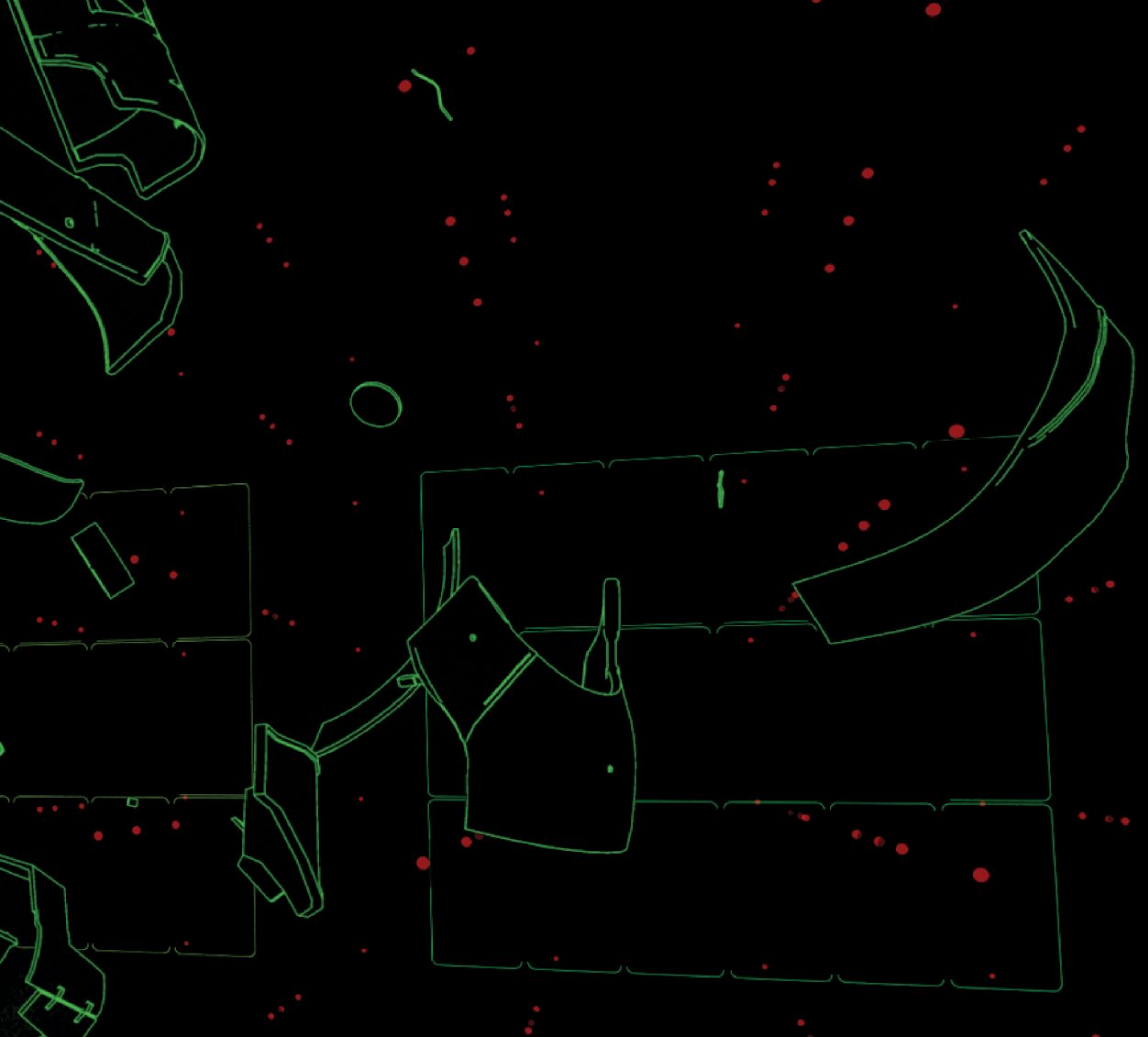
The teaser image took prominence over other early efforts that showed Stark laboring over his mask in the confines of his Workshop (above). Greenstein felt this part of the character's narrative — the transformation from normal person to super hero — was better

leveraged in commercials and movie trailers rather than print. Thus, the half mask teaser was settled on to make the introduction between a curious public and *Iron Man*. And as history now tells us, that introduction went smoothly. Very, very smoothly.



To give *Iron Man* a three-dimensional presence in theater lobbies, a standee was produced (right) with component parts (above) that could be put together into a semblance of the hero's armored form.





B I O S

Prior to his triumph directing *Iron Man*, **JON FAVREAU** had previously established himself as one of the rising triple-threat talents in Hollywood. His earliest film roles, *Rudy* and *PCU*, highlighted his witty and engaging acting persona. With the 1996 film *Swingers* — which featured an on-screen pairing with buddy Vince Vaughn — Favreau had his breakout moment as a screenwriter. After directing the mob comedy *Made*, Favreau had a huge hit at the helm of *Elf* starring Will Ferrell, marking him as a director to watch. After starring as Foggy Nelson in *Daredevil*, Favreau furthered his Marvel credentials by guiding *Iron Man* to franchise status as one of the year's biggest blockbusters. Among many other projects, he is developing the film's sequel.

Property Master **RUSSELL BOBBITT**'s resume includes such diverse films as *Star Trek*, *Starsky & Hutch*, *The Sum of All Fears* and *Never Been Kissed*. Tasked with the acquisition and maintenance of film props and set pieces, as well as the establishment of prop continuity from scene to scene, Bobbitt has been developing the physical reality of movies for 27 years. In November 2008, Bobbitt was presented the prestigious Behind the Scenes Award for Best Property Master by director Jon Favreau. He lives in Los Angeles with his wife Tracy, daughter Jordan and son Travis.

Hailing from Bosnia, artist **ADI GRANOV** has established himself as one of the most exciting stylists of 21st-century comic art. First making his mark with American comic-book fans on *Necrowar* for Dreamwave Productions, he quickly moved up to Marvel, where he asserted on a series of memorable *Iron Man* covers that himself as one of the House of Ideas' top cover artists on *She-Hulk*, *Inhumans*, *Thor: Son of Asgard* and *Silver Surfer*. But it was his work drew the attention of the book's editors; when the title was relaunched by writer Warren Ellis, Granov was invited on board to be regular artist. The resultant work, "Extremis," has been hailed as a masterpiece of Iron Man art. That caught the attention of the makers of the blockbuster *Iron Man* film, who early on used Granov's illustrations as the visual template for their hero's look. Since then, Granov has returned to comics and provided artwork for Jon Favreau's *Iron Man: Viva Las Vegas* limited series.

A storyboard artist since 1987, **DAVE LOWERY** has worked alongside some of the top film directors in the industry as an illustrator, animatics supervisor, second unit director and storyboardist. Film credits include Steven Spielberg's *Indiana Jones and the Kingdom of the Crystal Skull*, *War of the Worlds*, *Jurassic Park* and *Amistad*; Ron Howard's *Willow* and *How the Grinch Stole Christmas*; and Sam Raimi's *Spider-Man 3*. Following up his success at bringing *Iron Man* to the silver screen, Lowery is working on the film's sequel.





SHANE MAHAN has been working at Stan Winston Studio since 1983, taking a lead role on dozens of films as physical effects supervisor. He has managed creature effects for sci-fi flicks like *Predator*, *Predator 2*, *Aliens* and *Leviathan*; headed up the art department for *Terminator 2: Judgment Day*; and supervised animatronics for *Zathura* and *Eight Below*. As physical suit supervisor on *Iron Man*, he shepherded the development of the Iron Man armor from concept art to fully functioning suit.

RYAN MEINERDING has only been a freelance concept artist and illustrator in the film business since 2005, but his work is already drawing the kind of raves reserved for veterans of the industry. After collecting a degree in industrial design from Notre Dame, he eventually transitioned to Hollywood and worked on *Outlander*. Subsequent to his work on *Iron Man*, he worked on *Transformers: Revenge of the Fallen* and helped coordinate wardrobe designs for *Watchmen*. He is working on *Iron Man 2*.

In a film-industry career spanning thirty years, **JOHN NELSON**'s visual effects have been a part of some of the biggest blockbusters in movie history. Memorable visual effects work on *Terminator 2: Judgment Day* made his career, setting up a long run of success that included the films *The Pelican Brief*, *Johnny Mnemonic* and *City of Angels*. His work on 2001's *Gladiator* earned him an Oscar® for Best Visual Effects. He pocketed another Academy Award® nomination for 2005's *I, Robot* before leading the visual-effects crew that introduced *Iron Man* to millions of fans worldwide.

MICHAEL RIVA came to *Iron Man* as one of Hollywood's top production designers. In 1985, he was nominated for the Academy Award for Best Art Direction-Set Decoration for Steven Spielberg's *The Color Purple*, and since then he has logged credits on dozens of

high-profile films like *Lethal Weapon*, *A Few Good Men*, *Charlie's Angels* and *Zathura*, on which he first worked with *Iron Man* director Jon Favreau.

An avid comics reader, **JAMES ROTHWELL** developed an early fascination for what happens between the white spaces of comic-book panels, a pastime that doubtlessly influenced his life's work in the pre-vis animatics that help choreograph action scenes. An entertainment-industry veteran for 16 years, he has worked on such films as *Spider-Man 2*, *The Hulk*, *Outlander*, *Charlotte's Web* and *Angels & Demons*. He lives in Los Angeles with wife Evelyn and son Harry.

PHIL SAUNDERS is a freelance concept and industrial designer based in Santa Monica, California. He contributes his design expertise to a variety of fields including film, video games, theme parks, and product and automotive design. Saunders got his start designing cars for Nissan's satellite think-tank studio in San Diego. After four and a half years, he left to join game developer Presto Studios full time as creative director. During ten years there, he directed the design of many acclaimed titles, including the *Journeyman Project* series and *Myst 3: Exile*. Saunders transitioned into the film business in 2001. His work was a primary influence on the visual look of *Iron Man*, and helps add to a résumé that includes *Superman Returns*, *Jarhead*, *Zathura* and *Spider-Man 3*.

A leader in the film industry's burgeoning previsualization field, **KENT SEKI** logged 11 years for Pixel Liberation Front on films such as *Superman Returns*, *Zathura*, *Sky Captain and the World of Tomorrow* and *The Matrix: Revolutions*. At PLF, Seki headed up the firm's New York office, working on all manner of commercial and music video work. In 2002, he moved to their Los Angeles office and took on the role of creative director. Since his success on *Iron Man*, Seki now lends his talents to Dreamworks Animation.

A K N O W L E D G M E N T S



HARALD BELKER

BLT

RUSSELL BOBBITT

RICK BUOEN

RUDOLFO DAMAGGIO

EMBASSY

ADI GRANOV

ILM

MICHAEL JACKSON

PHIL KELLER

MATTY LIBATIQUE

DAVE LOWERY

SHANE MAHAN

RYAN MEINERDING

MICHAEL MULLER

JOHN NELSON

THE ORPHANAGE

PLF

PROLOGUE

ERIC RAMSEY

MICHAEL RIVA

ZADE ROSENTHALL

CHRIS ROSS

JAMES ROTHWELL

PHIL SAUNDERS

KENT SEKI

MILES TEVIS

EDDIE YANG



"To Caroline, Matthew and Isabella, I pass on my love of comics and, especially, Iron Man. And to Linda, my Pepper Potts, I dedicate all my hard work, a dry martini with lots of olives, and this book. Now it's your book's turn."

— John Rhett Thomas



FROM COMIC-BOOK LEGEND TO SILVER SCREEN SUPER HERO!

Get a close-up look at the evolution of the three on-screen versions of Tony Stark's futuristic armor — and that of his nemesis, the Iron Monger. Learn how the creative minds behind *Iron Man* brought the blockbuster motion picture to life through the use of storyboards, animatics and previsualization techniques. Experience the wonder of Stark Industries' most cutting-edge technology.



Here is everything you need to know about the making of the movie from all the key players — including director Jon Favreau; the special-effects gurus at Stan Winston Studios; and the award-winning concept illustrators, visual-effects designers and storyboard artists who worked on the set and behind the scenes to create the art of *Iron Man*.

